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Autumn 2023 / CM326

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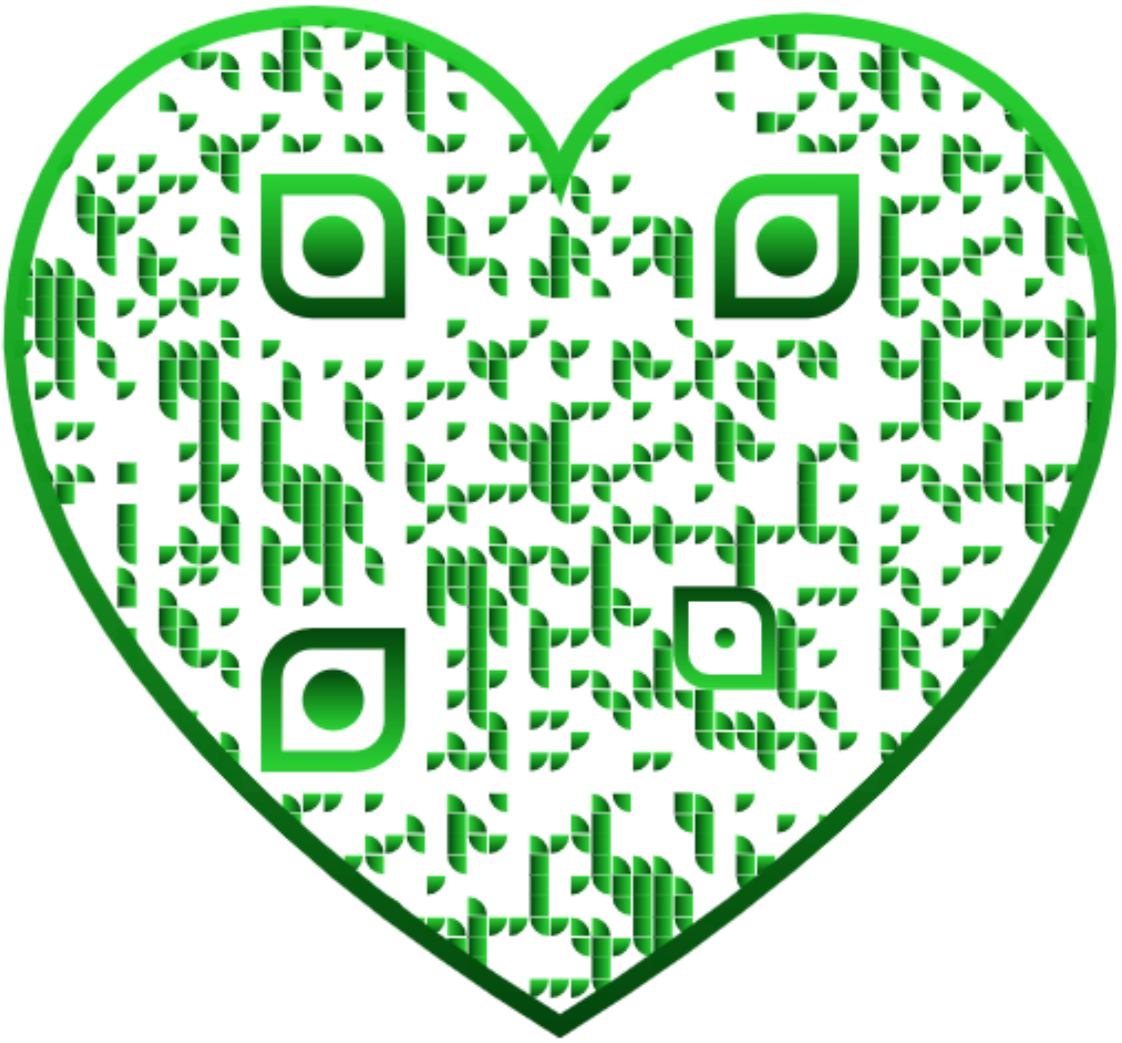
BEATIE WOLFE

The artist and thinker on how music really works

JESSY LANZA

On creative rule-breaking and vocal processing



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SCAN TO GET OUR WEEKLY NEWSLETTER

DOWNLOAD

See page 81 to find out how to download this issue's exclusive content

welcome

We've all got our own methods of making beats. There are those of us who loosely tap out our rhythms using a pad-based controller, safely knowing that we can nicely quantise it into rigidity later. Then there are those who might spend hours delicately dragging every element of a virtual kit around the grid, honing perfect percussive movement. This issue our essential guide to beat-building intends to take you out of your comfort zone, and prompt you to try your hand at beat-making in other genres beyond the one you typically work. We've also got an updated guide to some of the best drum machine and beat-crafting software available right now.

Also this issue we speak to two women who've become singular innovators in an ever-changing industry. Beatie Wolfe, the songwriter, artist and thinker, speaks to us on p56 and shares some fascinating insights into how music actually interacts with our minds via her extraordinary imPRINTING exhibition. On p40 we catch-up with Canada's ethereal titan Jessy Lanza and learn how her jazz background and theoretical knowledge has underpinned over a decade of music.

As ever, this month we've got a fantastic free giveaway: this time it's courtesy of Lunacy Audio. CUBE Mini is an extraordinary, 3D-sample-morphing-engine-driven synth that currently retails for $49! You can download it via this month's downloads page (**bit.ly/cm326downloads**) and then head to p82 to learn how to use this creatively rich piece of software. If that wasn't enough we've also got a fresh set of chord packs and a stunning curated selection of the very best in-house samples that we've made this year. Tempo set, let's dive in...

Andy Price Editor
andy.price@futurenet.com

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MAKE BETTER BEATS

Learn all you need to build booming beats across numerous genres **p18**

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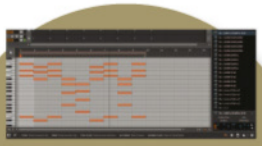

FREE MIDI CHORD PACK

JUST FOR *CM* READERS P9

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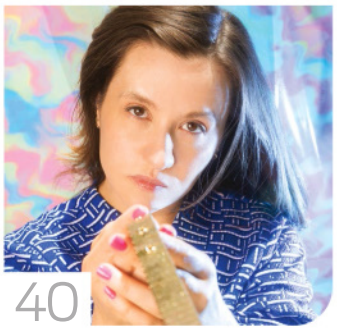

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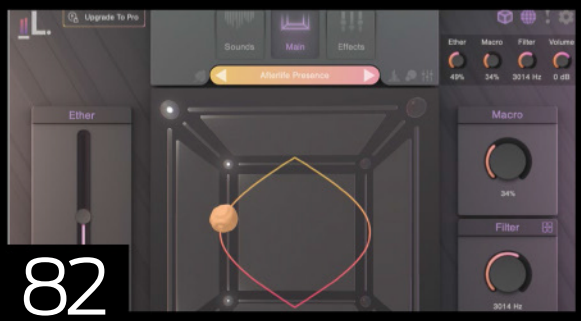

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LUNACY AUDIO CUBE MINI

We explain how to use this month's free software, the fantastic Cube Mini!

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THE BEST OF 2023

This month, we're sharing what we consider our favourite packs of the year, with 12 bespoke sample sets to grab right now!

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MASTERCLASSES

Follow along with our in-house experts as they guide you through their top tips for mixing and synthesis

DOWNLOAD

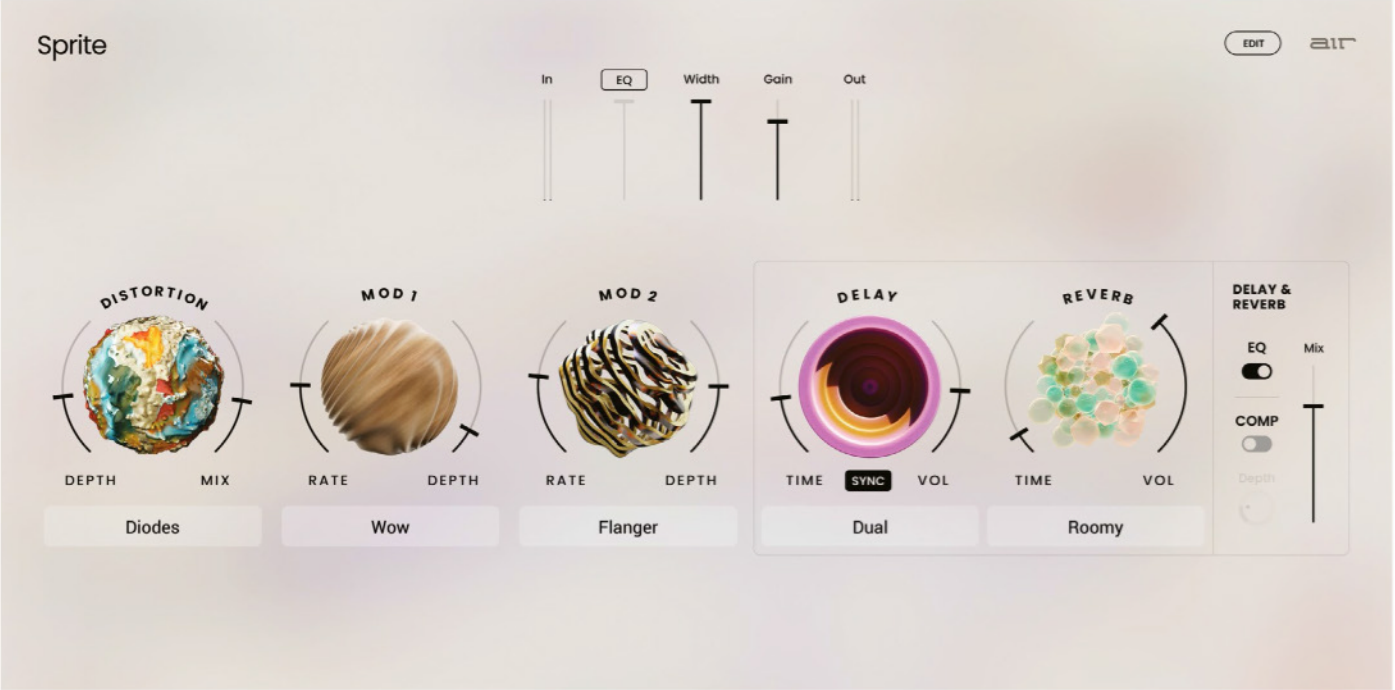
cm / plugin suite

YOUR SUITE IN DETAIL

More than 80 plugins for free. All you need to get started in music production! Learn more about the suite in this PDF

cm/news

NEW RELEASES >COMMENT >INDUSTRY HAPPENINGS



Thirst-quencher

AIR Music Technology release a classic-leaning multi-FX plugin that melds vintage warmth with modern dexterity

> AIR Music Technology has announced the release of Sprite, a multi-effects plugin that's said to be inspired by the "studio hardware staples" of the '80s and '90s.

Before software did (almost) everything, producers relied on chunky, rackmount multi-effects processors like the Eventide H3000 to apply effects like reverb, chorus and delay. Sprite is reportedly a 'modern take' on machines like these, though AIR tells us that it goes a step further and 'does things not possible in a hardware unit'. (We're not told what, however.)

Sprite packs an array of effects under its virtual hood. You'll find all of the usual suspects inside, including a reverb with eight room characters, a BPM-syncable stereo delay and a comprehensive distortion section with nine distinct distortion models. There's a raft of modulation options, offering chorus, phaser, flanger, flutter, wow, tremolo and auto-pan, and an onboard pitch-shifter too. The compressor section will help you in shaping the signal's dynamics while the EQ can finesse the plugin's output without the user having to open up another window.

A particularly interesting addition to Sprite that we don't see in every effects plugin that comes in for review is an envelope follower. This will scan incoming audio, using the signal's level in order to generate an envelope that modulates parameters like delay feedback and reverb amount. Neat.

The result of this is that you can potentially create responsive effects that evolve rhythmically in time with the sound that they're processing; imagine, if you will, a delay that amps up the feedback on every hit of a drum beat and then dies down again in between hits,

On first glance, Sprite's interface shares a simplicity with the increasing number of stripped-down, easy-to-use plugins that we've seen pop up in recent years; there are five large stylised dials that control five effects – Distortion, Mod 1, Mod 2, Delay and Reverb, as well as a few faders for shaping the overall output mix.

However, Sprite promises to give you the best of both worlds, as those hoping for more control over their effects can thankfully open up a separate window that contains deeper controls for more advanced sound-shaping. It certainly sounds promising from both an audio processing point of view and as a creative sound design idea-generation multi-tool.

Sprite is available for Mac and Windows in AU/VST/VST3/AAX formats, priced at $79.99.

www.airmusictech.com

The room-shaper

Many effect plugins these days are being designed with more descriptive section names to make them easier to understand. Ujam's new UFX Reverb is a case in point. Add a sprinkling of 'AI' and this could be the most '2023' plugin out there. The plugin features the means to create your own reverbs (including a 'Surprise' randomisation option). There's a huge array of reverb presets and corresponding effects, including a vast range of filters, crushers and distortions. Dimension and Character Modes enable you to sculpt the realistic responses. UFX Reverb looks like being one of the widest-ranging and wildest sounding reverbs we've seen, with potentially enormous flexibility, so we'll be getting this one in for review soon!

www.solidersound.com

App watch

We report on the latest developments in phone and tablet music making

Modular masterwork

One of the iOS's largest synths, VirSyn's Tera Pro recently received a salvo of updates allowing the modular synth to work on iPhone as well as iPad, a further update brought FM 7: a full 6-operator FM synthesiser with algorithms, dedicated control, LFO and more. Tasty. While available on iOS devices, VirSyn Tera Pro can also be brought into your regular plugin rotation using it as an AUv3. The synth is a beast, which caters for all, "no matter if you want to recreate sounds from analogue legends or explore modern digital sounds". www.virsyn.net

Low-cost lo-fi

We all love a bit of dirt here and there, so this new lo-fi processor is an intruiging new tablet-friendly addition to our on-the-go sound design. Developed by Kai Aras from Numerical Audio, Artifacts is an AUv3 plugin (or standalone app) which features six sections that take an input signal through filtering, noise, drive, digital and tape processing before finally outputting either the dry or suitably distressed wet mix. There's also a separate 'Liveliness' section, too. Currently just on iPad, Artifacts is available for the low price of $6.99. www.apple.com/appstore

Back to bass-ics

Strap in because this particular app packs a heck of a whallop. AudioKit Pro's King of Bass is geared towards building pumping bass and kicks via its 'real' synth engine. It features the company's bespoke open-source oscillators (which includes pulse-width modulation) and can harness LFOs for each one-shot. It's loaded with a plethora of analogue synth-sourced samples and features more than 300 presets to get you started on your journey into room-shaking beat-making. The 100 'starter' sounds are perfect for newbies. Get it now for $9.99. www.audiokitpro.com

COMPUTER MUSIC 10 years back

Our monthly shake-of-the-head at our earlier selves' news choices...

In last issue's look-back to 2013, we recounted the glory days of the DAW renaissance. It was a time when the expansive likes of Ableton's Live 9, FL Studio 11 and Apple's Logic Pro X firmly solidified the DAW as the default production environment for music makers both new and longstanding.

It was something of a jubilant time for *Computer Music*, as we'd been pointing

> We wallowed in the deepest end of the then-new Logic Pro X, and gaped in awe

toward this very future since 1998 – an age when desktop computers began appearing in the homes of even the non-anoraks, biding their time ahead of an inevitable takeover of every facet of our lives. In issue **cm**196 we wallowed in the deepest end of the then-new Logic Pro X, and gaped in awe at its mind-blowing abilities and streamlined workflow.

Tied to this DAW-quantum leap, we took a look at the cookie-jar-resembling new standalone Mac Pro that had recently been revealed by Apple, and wondered if it sounded the death knell of internal expansion in computers. "It's inevitable that fewer musicians are going to buy traditional tower computers in the future," we speculated, "and, while some will always swear by them, there are actually some arguments for doing all of your expansion outside the box."

Ten years on and (for most) the modifiable tower computer is a fondly remembered relic of an altogether different age.

cm196 dived headfirst into the all-new Logic Pro X

A slice of cherry pie

Acustica Audio (maker of our recent giveaway Fire The CM Plugin) have unveiled their first 4-band Hyper Mastering Equalizer. Emulating two legendary (or, as the company refer to them, 'notorious') mastering EQ devices, Acustica Cherry is particualrly adept at tackling low frequencies and nuanced curves. Its stark and simple UI reflects the analogue inspirations, while an alternative 'flat' variant of the UI is also switchable. The company point to Cherry's warmth and presence as being top notch, while its carefully balanced engine allows for quick CPU performance and minimal stress on even the most aged of computers. Alongside the standard mode, the four Hyper Equalisation modes include EQ Eco (which reduces power consumption), EQ Digital (which corrects all artefacts present in the original EQ) and Digital 2X (which adds 2X oversampling). You can download now for €199.

www.acustica-audio.com

Ins & outs

IS IT OVER YET?
Last month, Reinier Zonneveld broke the world record for the longest ever electronic music live set. His 11-hour techno marathon was performed at the Karren Maar Festival in the Netherlands. Reinier hasn't revealed how he managed 'the toilet situation' yet...

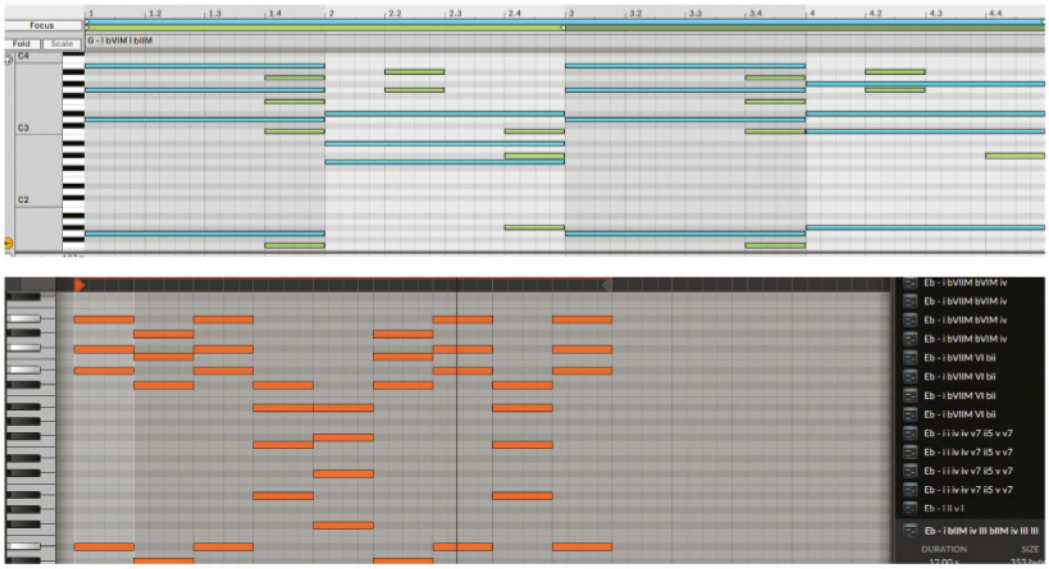
THANK YOU IVOR
Sadly, last month Ivor Drawmer passed away. The founder of Drawmer Electronics was behind some of our most pivotal music technology (including the DS01 Noise Gate). Ivor's inventions live on in both their original hardware and in software plugin form.

A LITTLE GREY MATTER
In Osaka, researchers working with Google discovered that AI can turn brain activity recorded on a brain scan into music. AI reinterpreted the scans as music, that was strikingly similar to the music that the subjects in question were being played at the time of the scan.

SOULLESS SOUNDS
French megastar DJ and producer Folamour bemoaned the state of electronic dance music. In an interview with *Complex*, he lamented that "most of the music released nowadays is empty of any soul and emotions, and I regret that." Is he right?

BLUE BLUE, ELECTRIC BLUE
One of our favourite headphones, Audio Technica's ATH-M50x, has been re-released this month in a dazzling electric blue. The ATH-M50xIB come in two flavours, a Bluetooth variant and a passive (wired) version. We've still got our battered originals somewhere.

WHERE DO WE GO NOW?
According to a report from CGA Neilsen, over 30% of clubs in the UK closed between June 2020 and June 2023. A range of reasons are given, including the current economic climate and the aftermath of Covid, but it raises some significant alarms.



Free SHLD MIDI chord cm pack

Ludovic Drolez' royalty-free MIDI chords and progressions packs have been widely acclaimed, and – exclusively – he's given us an enhanced version with more than 140 chord progressions for each key

> Do your chord sequences lack that extra touch. Or do you just need some fresh inspiration? Well, the SHLD MIDI Chord Pack might be what you're looking for. Reader and MIDI chord-crafter Ludovic Drolez has prepared an enhanced, expanded version of his highly rated collection, with 20 additional chord progressions taking his free 120-variant version up to 140. Head to **bit.ly/cm326downloads** to grab it now! Ludovic tells us more...

Tell us a bit about yourself...
Ludovic Drolez: I've been making music for almost 40 years, starting when I was about 10. A bit of piano, then a lot of guitar and drums. In 2020 I started buying different synthesisers and music software, because I wanted to compose and play independently, without the constraints of a band.

Why did you create the MIDI chord pack?
LD: I wanted to help starting producers. You can get stuck in the production of a song, and starting with a known chord progression can sometimes unlock your inspiration. Around 2020, I noticed ads offering chord progressions for far too high a price. That's when I decided it was time to make this project a reality and turn it into a collaborative project. I've spent a lot of time in the open source world; it seemed a natural choice.

Groovebox users are well catered for, too

How did you create it?
LD: Being a computer geek, I immediately thought of creating a program that could generate a chord pack for me. I started with a Python script to generate all of the chords and progressions.

The script uses other free and open source projects like Chords2midi and Mingus. The chord progressions come from public lists, contributions and my current inspiration.

Now everyone can contribute to this pack on github.com.

Why should people not pay for MIDI chord packs?
LD: 99% of possible chord progressions have been used since the beginning of music. The one-five-four-six progression has been used in hundreds of hits. I think it's part of our heritage in a way, and this should be free.

What can people use this chord pack for?
LD: Well, the pack lets people:
> Get instant inspiration listening to hundred of chord progressions.
> Use complex chords that nobody else uses, without having to learn music theory.
> You can begin with a classic chord progression like I-V-IV-VI and drag over it a few complex chords to stand out.
> Use advanced chords to write on top of, and come up with some unusual melodies.
> Use our MIDI chord pack with your favourite DAW, MPC and instruments; there's no need for another plugin!
> Drag and drop to test new progressions and emotions.
> It's royalty free, do what you want with it.

But, to stand out, and not sound like other artists, it's up to you not to use a progression directly without modifications, and to work on the rhythm of the chord progression, or modify some notes to make it sound better.

What's in the free pack?
LD: The SHLD pack (**cm** edition) contains 140 chord progressions for each key, and all kinds of chords, from simple triads to more complex chords.
> 738 MIDI files for each key, with 8,856 MIDI files in total.
> Compatible with all DAWs and some grooveboxes/MPCs.

The most interesting part is, of course, the chord progressions section, which is enriched from time to time as contributions are received. It includes classic progressions heard 500 times in top hits, as well as more subtle modal chord progressions.

One zip file contains the chords and progressions, and another only the chord progressions. The latter file is easier to use on MPCs or grooveboxes (such as the Roland MC-101/707/ MV-1).

The chords collection is organised using three levels:

1ST LEVEL
>All 12 major and minor keys
2ND LEVEL
> Triads (simple chords)
> 7ths and 9ths chords
> All other chords
> Full MIDI chord progressions
3RD LEVEL
>Major and minor scales
4TH LEVEL
>Progressions with different rhythmic patterns

To learn more about Ludovic Drolez's chord packs, head to his website **drolez.com/freemidi** and his YouTube channel where he promotes his packs – **www.youtube.com/@shldmusic**

Digit Music: building an inclusive future

Launching the innovative Cmpsr earlier this year, Digit Music are focused on creating an inclusive model of music production that allows those with physical restrictions to find their way into the joy of musical expression. We wanted to learn more...

Digit Music Founders
Owain Wilson and Simon Tew

cm: Firstly, we loved Cmpsr. How long had this controller been in the works, and what prompted you to develop it?
Si Tew: "The initial idea was really in 2018. It was all about recognising the need. I was working with individuals who had reduced access. A lot of instruments that were out there just weren't really working for them. That was the initial spark. Owain and I have known each other for a long, long time. He was working in a slightly different side of things, but noticing similar issues. We thought we should bring a design to market that met those needs and allows people to get creating. Things really started picking up around 2020, that's when we incorporated as a business and started to move things forward. By that point we'd already built a prototype and had been out working with people making music with it."
Owain Wilson: "As Si was saying, I came into this from a slightly more commercial aspect. I was working at Native Instruments at the time. Again, it was a similar thing. People were struggling to engage. We both felt that things didn't have to be that complicated. We didn't want to water down the experience for people. We talk about AI and things like that these days where you can just hit *do something* and software creates for you. As musicians that's not what we wanted – musicians want involvement in the journey. So the idea was 'how can we make something that keeps people completely in the driving seat'? Cmpsr assists with jumping over what might be a barrier for them. Either on a physical level or even on just an understanding level. Whether it's keyboard- or plugin-focused."
ST: "Both of us come from a live performance background. We've done live electronic music with lots of physical instruments. It was baking that all down to one device where you can control it all with just one finger. Hopefully we're helping people jump over those barriers and they can see themselves as musicians."

Cmpsr "keeps people in the driving seat" – with a joystick design to match!

The makers of Cmpsr see it as a bridge to help all users navigate music creation with ease

cm: Could you give our readers (who might have missed our review) a top-down overview of Cmpsr's abilities?
ST: "It's gaming technology with musical capabilities essentially. The way that we describe it is taking the power of a full keyboard – and the knowledge and music theory of someone who knows how to get the best out of that keyboard – distilled into a device you can play with one finger. The tuning is automatically done on the device. It's worth noting as well that there's no necessity for a software layer between Cmpsr and whatever you're using; if you're running it on an iPhone or with a Mac, whatever you're using comes in and out as MIDI. There's no key-fixing on a software layer, it's all done inside the instrument. People can simply move around and play chords. You can also access notes outside the scale if you want to get more technical. Then we've built in lots of CC options for control. You can basically run entire Ableton Live sets, and really get expressive with MPE/SWAM-based instruments. You can also use it as a massive X/Y pad, which works nicely in a live environment. We want it to feel like an instrument in its own right."
OW: "Just to add, that it has all those abilities but it's also simple and inviting for people to use. Anyone can pick it up and play it straight away. If you want to dig under the hood as an advanced musician, then Cmpsr will scale with you. With a traditional instrument you've got to put a lot of time into it."

cm: You've mentioned that you envisage Cmpsr as potentially a live performance instrument. Can you imagine it onstage, being used alongside other more traditional instruments?
ST: "Yes, it could either be among real instruments or sit within a full electronic set-up. The flip side of using it as an instrument is running your Ableton Live rig with it, or running Bitwig. We've got people using AV

> "Music is a part of the cultural landscape, and many have been shut out"

setups with it, via software like Resolume. What's actually programmed onto Cmpsr at the minute is about 5% of what we've already designed and tested, so we've got a long feature roadmap ahead. We're going to be drip-feeding new elements. It can even run ambisonic rigs for spatial audio mixes. But we figured slow and steady wins the race. We wanted to slowly release these things as user understanding increases."
OW: "When I'm doing live shows I work with two Cmpsrs, it's a better way to interact with the plugins that I use than other tools out there. We're making this in order to help people gain access to the music production process, but also make things smoother for seasoned professionals."

cm: There's a big emphasis on the benefit that Cmpsr brings to making music production more inclusive, is this an avenue that Digit Music will continue to explore in the future?
OW: "Yes, we set the company up as disability confident and so I think we both feel that there's a need for diversification in music and the wider creative industry. That starts by giving people a tool they can actually be creative with. That's definitely one of the core values for us. When we talk about accessibility it's not as simple as a defining concept; it could be a financial or a geographical restriction, so we try to put all of that into the mix when we consider what we do. We're really trying to think about what barriers we put in place as instrument designers, that might not allow everyone to have an equitable experience with it. I think that permeates through all of the resources that we make, too. We're lucky that we're plugged into a broad network of disabled musicians. They offer that insight that we don't have."
ST: "I think there's something about designing with that in mind as well. Because, what we're talking about is designing a user experience and accessing vast amounts of power through a simple user experience. It's a concept that works for everybody. Though we're focused on equitable access, it also

appeals to, say a young beat-maker, who doesn't understand music theory, it works for the studio producer who just needs a new tool that's quick and intuitive. Music is a huge part of the cultural landscape, and vast amounts of people have been shut out from having any input on that. We need to change the tools in order to make sure everyone has access."

cm: The haptic feedback aspect is really cool. Do you think haptic responses will help software-oriented music-makers reach a point where the process feels more tactile?
ST: "There is that side of it definitely. The haptics are really for giving information very quickly without needing to look at a screen. If you need to be scrolling through menus on-stage, it can be quite off-putting With the feedback of Cmpsr you can 'feel' where you are in a more tactile way than staring at a screen. For someone who's visually impaired, you've got to be able to understand where you are and what buttons you've pressed. We're lucky we've got a wide network of visually impaired musicians who we were able to work with and get feedback. It's very informational."
OW: "We've even thought about using it from a guided performance point of view. There's no reason why we can't use haptic feedback to help people improve their performances, too."

cm: For the release you partnered with Bitwig. Is that DAW the recommended accompaniment to Cmpsr?
OW: "Well Cmpsr works with all major DAWs. I've lost count of how many DAWs I've tried and used across my time in the industry. One part of the company is focused on sound design so we use lots of different DAWs in our day-to-day work there as well. The reason we landed with Bitwig is just because they've been really supportive with what we've been doing. They saw a value proposition with being integrated with Cmpsr from the get-go. There's a lot of mapping you can do with Bitwig, as well. But, it's really important for us that it integrates with whatever DAW, or whatever piece of music software. Anything that accepts MIDI, basically."

cm: What's next for Digit Music, and can you share any other information about upcoming releases? And how do you see the company developing more generally in the future?
OW: "Well as we say we've only incorporated between 5 to 10% of the total ability set of Cmpsr into the unit at the moment, so our roadmap will continue. We didn't want the launch to be 'it does everything for everybody' – we wanted to make it simple to understand then build it out. There are more advanced DAW mappings in the pipeline for Bitwig and Ableton Live. We've got more music innovations on the go, we're looking at a digital version of the hardware. But, for now, the big thing is getting the word out and growing our customer base. Music is still waiting for its Instagram and TikTok moment, it's not quite happened yet. We're not going to be that for everyone, but we're very focused on the joy of playing an instrument as opposed to creating a full-blown recording environment that lots of other people are more focused on."
ST: "In addition to Cmpsr, we do a great deal of sound design and sell hundreds of thousands of samples every month via Splice, Loopmasters and other sample content hubs. We're building a portal that will explain how our software, and hardware, works alongside custom mappings. The aim of that is to enable people to be that bit more successful with our technology."

For more information on Digit Music, visit www.digitmusic.co.uk

Transit

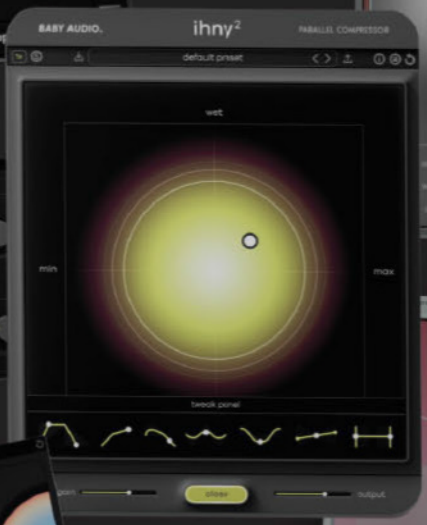
BA-1

Super VHS

Crystalline

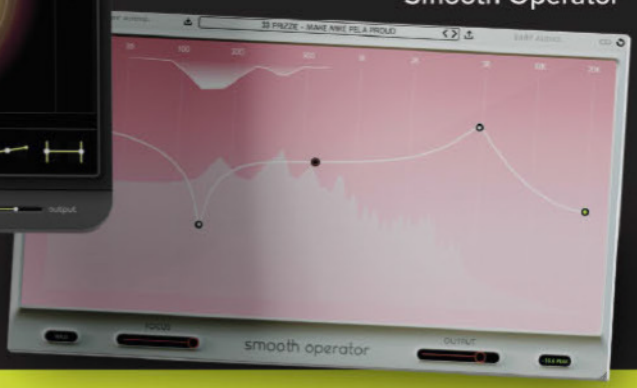
TAIP

IHNY-2



Comeback Kid

Smooth Operator



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15 questions with...

Keir

Demonstrating astonishing vocal prowess across a salvo of infectious singles, chart-eyed singer Keir is set to be showing up on tastemakers' radars imminently. We spoke to the southwest-England-hailing powerhouse, alongside his writing partner and producer George Glew to learn about the long process of making his debut album

> Seizing our attention upon the first spin of his single *Lemonade* earlier this year, Keir evokes the flamboyance and bombast of such stadium-appeasing icons as David Bowie, Freddie Mercury and Prince with an emotional, empathetic through-line, dealing with complex themes, including struggling with mental health-related issues. All of which sits within some very elegantly-sculpted mixes.

Alongside his songwriting partner and production-guru George Glew, Keir's songs have been generating serious buzz across the music press for the last year, with his debut self-titled album released over the summer. We spoke to Keir and George right on the cusp of its release, to learn about their collaborative writing process, how they arranged the tracks to accentuate Keir's immense voice, and the broader themes resonating from Keir's work.

Suited and booted: Producer George Glew (left) and Keir

1 Hi Keir, hi George. Firstly, Keir, how did it all start for you?

Keir: "I was a very lucky person in that I never really played with the idea of doing anything else. I was a support worker with autistic people for a little bit while I was studying at uni. But studying in a small town, as a teenager I was just obsessed with the idea of making songs. You might learn covers but actually I was really, really young when I got intrigued by 'making' songs and telling some sort of story. People around me, like my brother and my family, didn't laugh at me; they encouraged me.

"About five years ago I met George, who became my main songwriting partner and the person that I've written this whole album with. We made a song a week for about five years. Loads of bad material, of course, but it meant we could pick and choose the 11 songs on this current album."

George Glew: "When we realised we both did music we made a few things back in my old home studio. We made his first single *Shiver* on the first day we did a session together. It was very natural. We've always worked together well, it all happened organically and it didn't come from any kind of management."

2 How do you two typically work together, how do you divide up who does what in the studio?

K: "We get in the room, we're very open and very instinctive. He knows chords better than me. It's a strange thing, I can kind of feel the direction more but George can tell me what I'm actually doing. I'll normally take melodies and lyrics and the overall 'idea': 'what is the story or narrative?' Sometimes these things develop as the songs develop, though. For me it has to be a collage. I can't write very 'literal' lyrics, there needs to be a bit of subconscious mystique to them or I can't really do it. "

3 How long has the album been in the works?

K: "About six years; it's a life's work! It's the first one. We just kept writing that mountain of songs, hoping we'd one day be able to do this. We didn't bother ourselves with asking 'what is this?'. I think that sort of over-analysis can sometimes make things sound shit. The whole point is that you're expressing something. That is the definition of freedom."

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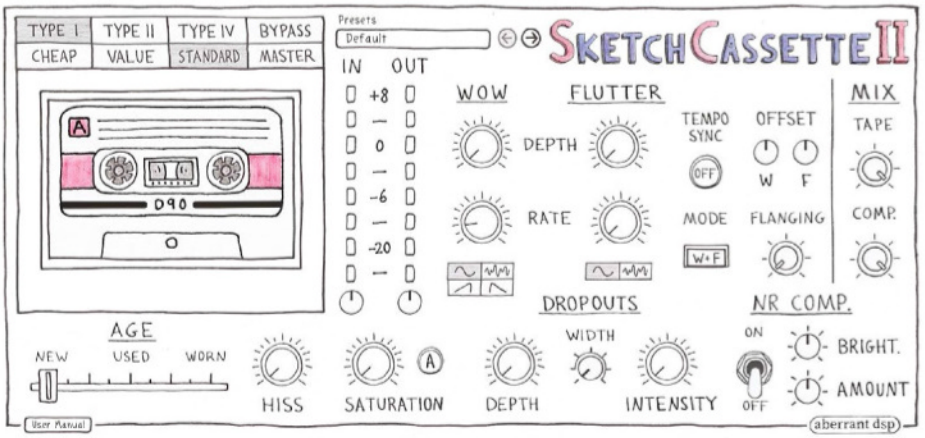

SketchCassette was used to "dull things down a little"

Soundtoys Devil-Loc: One of the many Soundtoys effects used throughout the making of the record

Pultec emulations, such as the UAD Pultec EQP-5 were used heavily

4 Where was it recorded?

G: "I've got a studio within a complex of studios. That's where we made the album, we did most of it there. We did drums at Mizpah Studios in Bath. Most of the tracks were run off demos that we'd made in various rooms over many years, and none had real drums, then getting the sound we wanted with the drums with Marc MacNab was brilliant. He'd know what drum sounds to get. With the drums it's quite specific for the track, there's quite a few different drum sounds in there. There are no samples, aside from the song *Bulletproof*, it's mainly 'what you hear is what you get'. On *Lemonade*, that's just the kit without samples helping it out. We also went into Invada Studios in Bristol to do part of it. We did piano/keys and Rhodes, Farfisa and Moog stuff, they've got a great gear selection."

5 *Lemonade* is extraordinary. How did the idea for it first form?

K: "It's kind of white noise to me, because when you take songs through the mixing process and the mastering process you end up being quite bored by them. But that one, more than any other, I was able to hear it post-release and feel like it was actually quite audacious. It's theatre, it's Freddie, it's all the things I love. The verse is a little bit sexy, but the chorus is massive. I love that. I feel confident to speak like that in music. I don't know why. I'm quite an introverted person in real life but within songs I can shout 'Is it love?' And deal with those bigger concepts."

6 When you were making the tracks what software did you use?

G: "I used Logic. We used quite a few software instruments on the record, we've used Omnisphere to augment the band sound. UAD plugins were central for doing a lot of the mixing. We used some Arturia softsynths. I tend to make a lot of sounds in the room and then sample them. I'm a big Plugin Alliance fan, their stuff is mad good. "

7 In terms of the vocal production, how did you work to make your voice stand out as much as it does?

K: "I'm pretty unfussy. Recording vocals is like homework but worse, I hate doing it! The writing process is great, but I lose my patience after about 50 takes. Give me a mic and I'll do it.

> "If you continue to write and write, your true musical self will reveal itself" Keir

We'll try a few things out. I then might have strong opinions on the sound of it. We don't want things to sound too wet and also I like things to not be too perfect, leaving in the odd bum note. I have strong opinions, but I'm not that fussy. We used an AKG C414 for a lot of stuff, my manager gave me an old Japanese one. Something was gone inside of it, but I loved its sound. I wouldn't give it back to my manager, I told him 'there's magic inside of this thing'. I might have a rough idea, but then George will get his chisel out and dig in to get the good stuff out of it."

G: "For the chain for *Blood in the Water*, we wrote that song when lockdown was easing up, and we used the original vocal. We did it at Keir's parents' house. His dad deals in mattresses, so we used some of those to pad out the small office and make some DIY acoustic treatment. We used a 414 on his vocal into a Focusrite ISA-1 and then a Warm LA-2A. To be honest, it didn't really hit the LA-2A much, and I probably wouldn't use that now. It was very much a figuring things out process. But the vocal sounds great on that."

8 Which of the songs took the longest to get right?

K: "Possibly *Shame*, the final track. We went through a little phase of doing a kind of Jeff Buckley-style breakdown into a sort of atonal madness. Because it was the last song we thought we'd got a bit absurdist, and have a middle eight that lost all sense of time before you sink into the final chorus. In the end we realised we just didn't need it. We've been trying to keep things simple, even though songs like *Lemonade* are quite out there and theatrical. I still wanted it to be as simple as possible."

GG: "Also, *Bulletproof* – that was really hard. We did a lot of changes in that track. It goes nothing to everything, and I wanted to keep the drums live but feel a little bit more sampled in a way. I probably would do it in a much simpler way now, but we tried to loop stuff to make it feel more beat-locked, but keep it live. We added an 808 kick to make it more impactful. It adds weight. There's a producer called Fred Cox (NoisyFred) who has these Sample Shed sample packs. We used a few of those because they're really great."

9 What mixing tools did you use to hone the tracks in-the-box, George?

G: "Pulteq EQ emulations were quite important. The MEQ-5 and EQP-5 within the UAD Pultec Legacy bundle were used heavily. A great many more UAD plugins too, including TubeTech CL 1B, AKG BX20 Reverb and the Brainworx Ampeg SVT-VR bass amp emulation. The UAD Ampex ATR-102 is on every track on a stereo bus. It just sounds class, adds that warmth to it. You can really change the curve of

the track. It's something I'm using less now because it really does affect the contours of the track. It affects everything. Soundtoys Devil-Loc, Alter-Boy and Echoboy/Echoboy Jr are all over the record. We used MeldaProduction MAutoAlign for phase-aligning drums.

"There's a really nice plugin called SketchCassette that's a tape emulation plugin, but it's very cheap and rough and ready. That was used to dull things down a little. It's kind of a secret. It's similar to the RC-20 Retro Colour plugin. It's really creative and I used it to crush sounds."

10 Keir, it sounds like you're quite intuitive with your writing – is too much theoretical knowledge a bit of a bad thing sometimes you think?

K: "Everyone's different aren't they? I know that early on, I knew I didn't have the aptitude and patience to get that good at playing a harmonic scale, but also I wasn't interested so then it went even further into that intuition. I made a conscious choice early on that it was the writing I was interested in, not the how. Luckily I met someone like George who can help make sense and sharpen up what I can do."

11 Do you have your own writing studio, Keir?

K: "You can call it that! I've got a nice Warm Audio preamp. I make a lot of scrappy ideas at home, where I can just be free. I then take stuff to George and ask 'is this something?'. Before starting the album I made this ridiculous one-minute song called *Smile*, which had a Beach Boys-esque choral thing going on. I realised it was a bit annoying."

12 Are you also writing within Logic?

K: "I was using Logic, but then my laptop broke so now for idea generation I'm using GarageBand. But you can just use anything. You have good ideas and you follow them to the end and you work hard, you can use *anything*. 'All the gear, no idea' sometimes. George is good at finessing things!"

13 You're set to be playing live soon. Will the arrangements of these songs change at all?

K: "Yeah, they change a lot. We haven't played or toured the album yet, but *Time* I love a lot. I'm a bit of a sucker for a ballad as well, even if it's a bit cheesy or a bit hammy. I bloody love it. My least favourite song on the album I played to my housemates and it was their favourite. Then I started to hear it through their ears and realised 'oh my god – you can project the thing with a piano and your voice'. *Lemonade* is a great one to do as well. They do change, they definitely get much heavier. I tell the guitarist and bassist to get a bit naughty! It needs to have a bit of edge. I like it cranked, so things might go wrong. I like that. Let's not play to a click. My brother Kyle is our drummer, and he will often take the piss out of my timing. I just like to keep the ship a bit wonky and interesting."

14 What advice would you give to anyone looking to get into music in 2023?

K: "Starting out, bear in mind the [artists] that you love. There's no problem with making music like them for a while. If you continue to write and write and write, your true musical self will reveal itself."

15 Finally, George, how has the experience of working with Keir been for you, and will you continue to write and produce together in the future?

G: "Hopefully so; we've been mates for so long. There's a lot of opinions and voices in the room but we're able to separate that out from our relationship. He's just one of those unicorns that has got everything. There's tracks that were meant to be on this album that didn't happen. There's a more soulful side to Keir that's to come soon. The next stuff will be really interesting..." **cm**

Keir's debut self-titled album is available now

HEAR MORE

Lemonade
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Time (Is a Healer)
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1262 Hz
0.00 dB
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Bottom
FLEXI 1
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ACCENT
DECAY
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HOLD
NOISE
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VOLUME
TUNING
DIAMETER
DEPTH
Q-Couple
HQ
Processing
Stereo

MAKE BETTER BEATS

This month, we're going big on beats, the rhythmic backbone of your music, and the element that sets genres apart and gets feet tapping. Over the following 20 pages, we'll tackle both programming and mixing better beats, with tips for better acoustic and electronic drums (and all without a human drummer in sight)

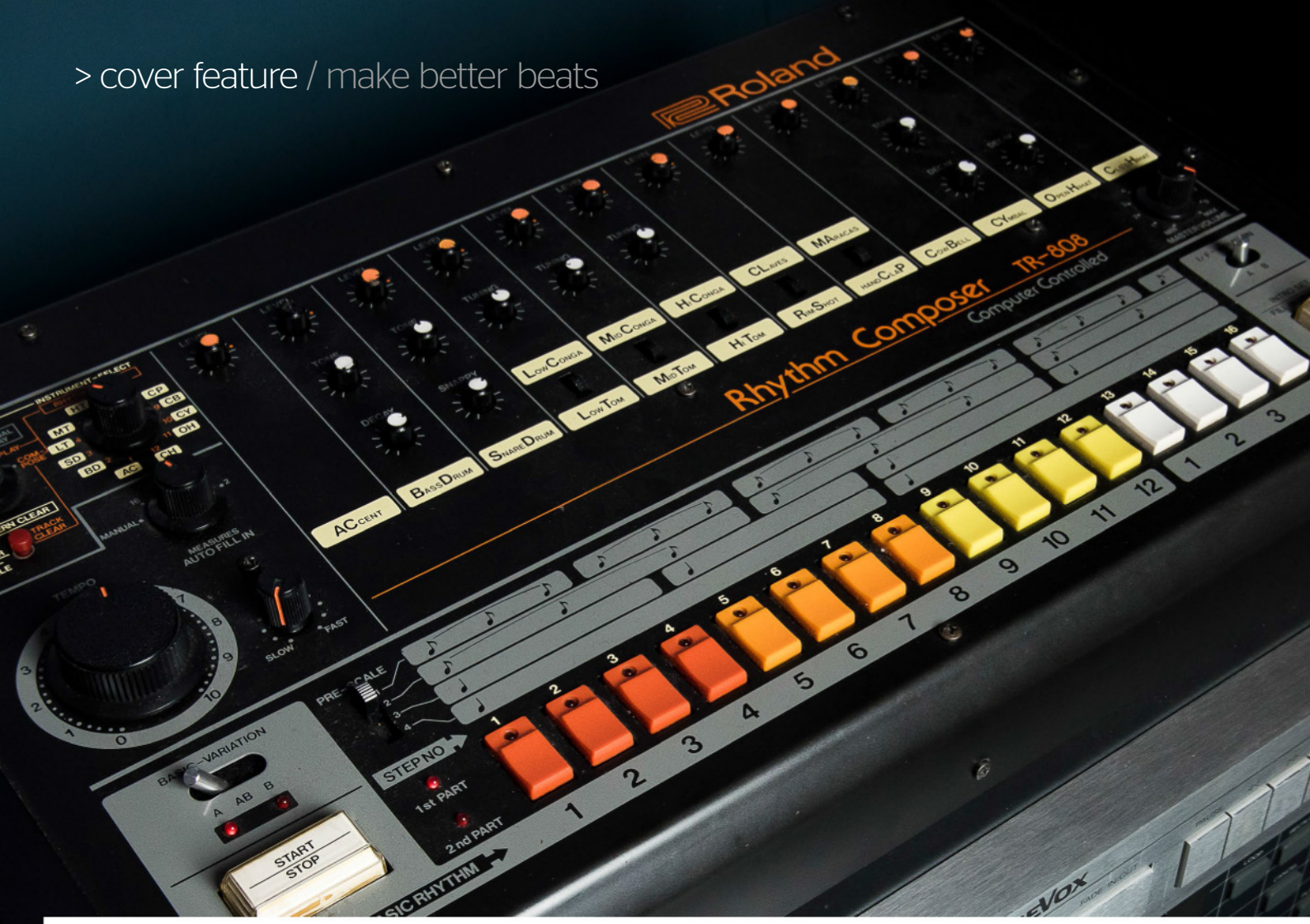
> Drummers across the world are running for the hills! That's because the world of computer music-making has never been in better shape when it comes to beat-craft, with software packages and drum machine plugins more feature rich than ever before. Now you can have practically any electronic drum machine in history on your hard drive, plus the best acoustic drum kits, played by the best players, all recorded by the most incredible mics in the finest studios in the world. There really is no reason to leave the comfort of your computer to create either the most hard-hitting electronic beats, or the most authentic-sounding acoustic drum tracks.

And it's those two broad categories – electronic and acoustic – that we're focusing on here. In previous features we've tended to discuss one or the other as separate beat-making entities, but the computer has united the two worlds. So it doesn't matter how you create your beats: you can merge electronic polyrhythms with acoustic loops, underpin a raging metal drum track with a huge 909 kick, or even smatter some machine gun trap hats over a country drum track. Actually, that sounds awful, but you know what we mean: when it comes to beat creation, your computer lets you create them however you like.

Broadly speaking, we're starting by covering programming – from basic to intricate – across a variety of broad-stroke genres, all demonstrated with a kind of step- or note-sequencing format that any DAW user will recognise. Then, for the humans among you, we'll detail some of the tips you can use to make those beats sound more 'real'. Of course electronic producers can leave humanity at the door if they wish – a lot of club genres swear by the rigidity and power of tightly-quantised beats, and that's fine. But one of the big criticisms of computer music making is that it somehow removes the 'proper human' element – so we'll show you how to bring that back.

Elsewhere we'll cover several production techniques, including mixing a drum kit, whether that's been recorded directly from a real one, or one from a library. And talking of those, we'll detail some of the best libraries for acoustic drums, the best machines for electronic beats, the finest free beat makers and our choice of 'out there' instruments. Being 2023 and all, we'll take a glance at AI beat-making, too.

So put your sticks away, or wish your drummer well, and prepare for better beats!



A (very) brief history of beatmaking

For the last 50 years or more, technology has already been helping us with our beats and has defined how we create them within our DAWs today. Let's look back and see exactly where it all leaves us in 2023...

The heartbeat pounding in our bodies is not only providing the helpful function of keeping us alive, but also gives the perfect raw materials for the human rhythm track. It is perhaps inevitable, then, that getting any emerging technology to help us create beats has always been high on the human agenda. If we had all day we could potentially trace this use of 'technology' back to when someone decided to club some rocks in a sequence, but instead, we're going to skip forward a few millennia to when electricity got involved.

From electronic...

In fact, we're even going to skip over the 'drum machines' of the 1950s and '60s that used basic electronics or tape to give you drum sounds and ballroom beats. We're fast forwarding to – where else – the 1970s. This was the decade that not only gave us cheap(er) synths but the first modern drum machines, and both are directly responsible for how we make music today.

As is the case with a lot of technology, it was created to replicate something that was hard to do, so, to a certain extent anyway, early synths were trying to create orchestra sounds and early drum machines were trying to be drummers. We're simplifying things, of course, but in both cases, it was the technology's inability to do its intended job, or (more kindly) its flexibility to do jobs we hadn't yet thought of, that ended up creating next generation machines to create genres of music we're still enjoying today.

For the drum machine, this meant early '70s models from Eko and Roland (then known as AceTone). The former's 16-step approach could be said to have kick-started sequencing while Roland gave us the TR-77 which, like so many of their products, was designed to be the perfect partner to... an organ. The company's CR-78 was the big one though. While it also featured organ-style presets for Bossa Nova and Rhumba rhythms it would be adopted by artists including John Foxx, Peter Gabriel, Genesis and Depeche Mode more for its electronic sounds and less for its *Strictly Come Dancing* tendencies. Roland had inadvertently given us electronic beats that everyone had access to, not just Kraftwerk. And then they did it again, and the rest was EDM history. 'O' yes they did.

XOX rated

So much has been said about Roland's next range of TR drum machines that we have little to add. Suffice to say, the Roland TR-808 and 909 – alongside the TB-303 (another unintentional Roland genre launcher) – helped dance music along the way. They also took the step sequencing/beat-making approach up a level, so much so that their 'XOX' approach is still used today. Drum machines then went digital and sampling became 'a thing' throughout the '80s, but these highly editable and superb-sounding Roland machines really did set a blueprint for most drum machines that followed, in both hardware and software. So much so that the first proper software instrument – Propellerhead's ReBirth RB-338 – emulated both the 808 and 909 drum machines and the 303 Bassline. Yes there were very early software instruments before ReBirth, but this was the first to do complete tunes.

Some classic gear became famous through misuse of simply happy accidents

You know the rest of the history. Software drum machines became big business as they were easy to run on early computers. However, these instruments were still largely producing electronic beats for a largely computer-based electronic music producing audience. The drummer was still safe. Until...

The rise of acoustic beats

As processor speeds and hard drive spaces increased, the software industry turned its attention to recreating *real* drum kits. So nowadays, with gigabytes aplenty, we can get recordings of every drum, from every kit, at every angle, recorded with every microphone.

And while some of these acoustic drum libraries focus on quality drum kits and mic placement, others offer you MIDI files of playing produced by real people! So unlike some other software instruments, drum libraries go that bit further with real playing mixed with hi-tech processing. Now you can get the full experience of a human being behind the best drum kit ever made, all within your DAW. (There are even signature drummer plugins with famous named drummers supplying their sounds and styles – so not all drummers are out of work just yet!)

As you can see, then, the last five decades have brought us here pretty fast and this article is really a celebration of where we're at and where we came from. We're aiming it at all levels and all beat creators. Whether you use the XOX style of creating beats, or you like to drag in individual kicks onto an audio track and create your own, or you record a real drummer, or whether you just let AI do it all, you will find something to learn over the next few pages. We'll mix, tweak, EQ, compress and even analyse beat-making in different genres.

Beats in the **cm** Suite

We run through some fine freeware drum machines at the end of this feature, but you already own several as part of the *Computer Music* Plugin Suite which is free with this issue. Here's a quick run through of what you'll find. First up, Dopesonix have provided us with Beat Machine 1 CM, Beat Machine 2 CM and Beat Machine 3 CM. These are basic beat plugins with excellent sounds across the three for hip hop, trap, grime and drill. You get an amazing 145 kits and 100 hip-hop and contemporary MIDI files for creating beats. Next up, XILS-lab StiX CM is a drum synth and sequencer which is capable of both vintage analogue and early digital drum sounds. Thenatan Trax CM is a sample-based drum machine with 20 kits plus controls for noise, distortion, pitch, filter and reverb. Brunsandspork Grooove CM has 50 kits, plus you can load in two sounds per slot for extra flexibility. Finally, AudioRealism ADM CM is an XOX-style drum machine, very much of the vein of a classic Roland machine (as discussed left).

Our tutorials over the following pages are based on programming sounds and production techniques, and you can certainly use these CM Suite drum machines as the source of the sounds we discuss.

Beat creation with AI

No feature in any technologically-minded magazine is complete without the mention of AI! However, such is the current level of technology behind beat creation, you would assume that artificial intelligence is really 'not required'. Electronic beat creation is often better the simpler and more hard-hitting it is, and acoustic drum production, as with our 'best library' roundups, is in as good a place as it's ever been. However, there are major players pushing the AI buttons. Toontrack – who else – is at the forefront. They might not call it 'AI' but Superior Drummer and EZdrummer have features that cover everything needed to humanise and create beats. Song Creator (which suggests clips based on MIDI files) and The Tracker (which cleans up or edits beats in drum loops) are just mind-blowing. Elsewhere, AudioModern are probably at the forefront of easy beat creation with Playbeat 3 (more details in our Buyers Guides) and Audialab's Emergent Drums can 'create' infinite drum sounds using machine-learning technology; DrumNet claims to do the same with AI-powered technology and there will be more. But do we really need that much help with our beats? Our DAWs have already made beat creation a lot easier than it was and we're in a fantastic place already. So, perhaps AI will not have the impact here that it's having in other areas of our lives. Do we really dare to make that kind of prediction in 2023? No, we don't.

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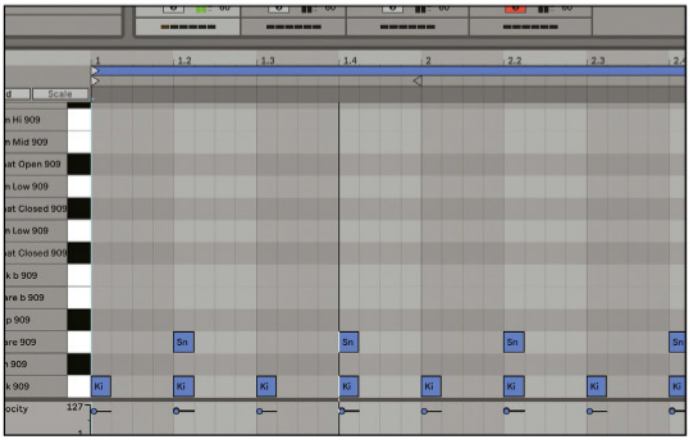
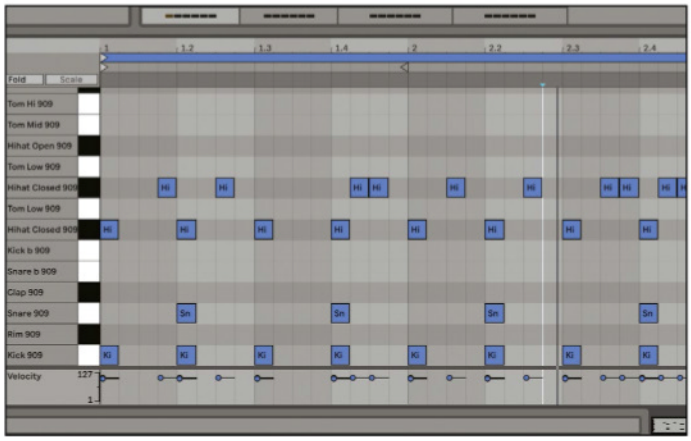
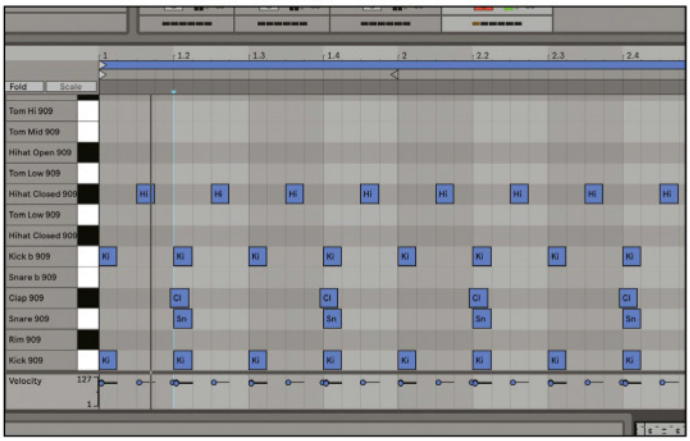
> Step by step 1. Programming beats in six different genres



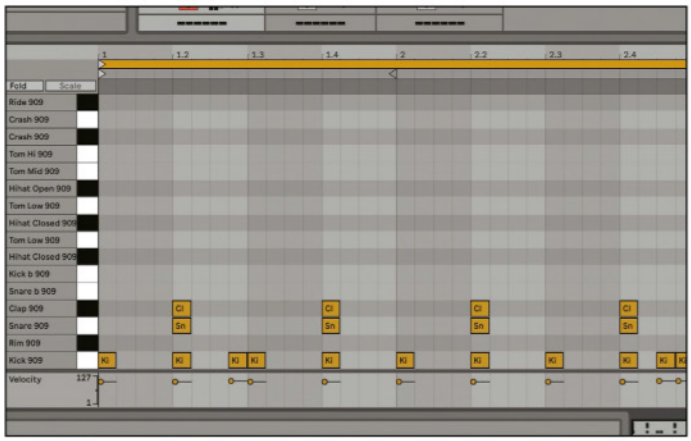
1 > We'll start by swiftly covering several main genres of music using a typical sequencing approach (ours is in Live but will be similar to most DAWs). We're starting with the simplest – **house** music – which has a tempo of around 130bpm. Use a 909 kit if you can and place a kick on every beat in the bar and a snare on every other.



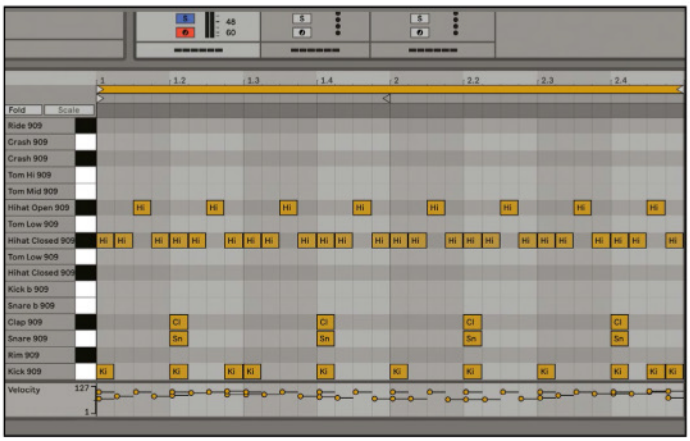
2 > Continue with a closed hat on the off-beat of each bar and then add another one on top of this to add interest. You can use variations of this second hat pattern to add interest to loops as you arrange your tune.



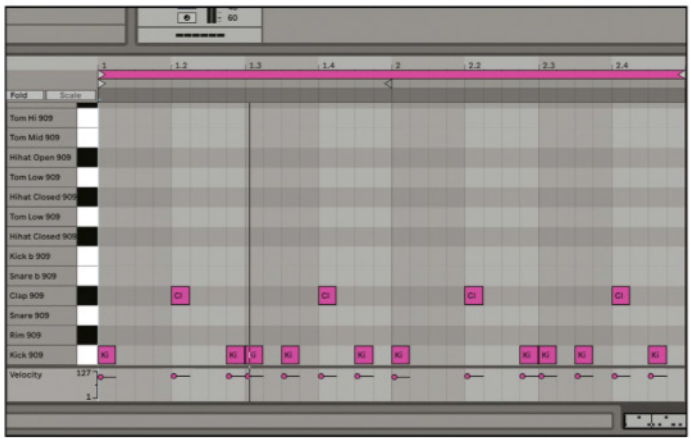
3 > Variations on house music will pretty much start with the last pattern, and now you can add other flourishes to take it into different sub genres. Consider adding another deeper kick and a clap that hits just before the snare for an **electro house** vibe, for example.



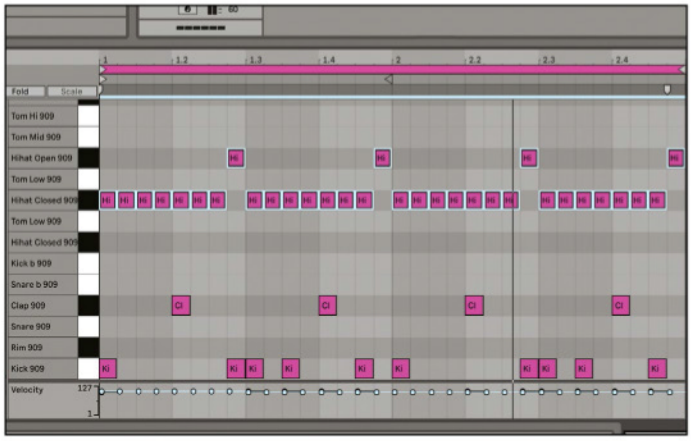
4 > When you move into the realm of **trance**, you can take the same house building blocks, but you are now upping the BPM to around 140. Note the extra kicks and the clap in time with the snare this time for a more rigid feel.



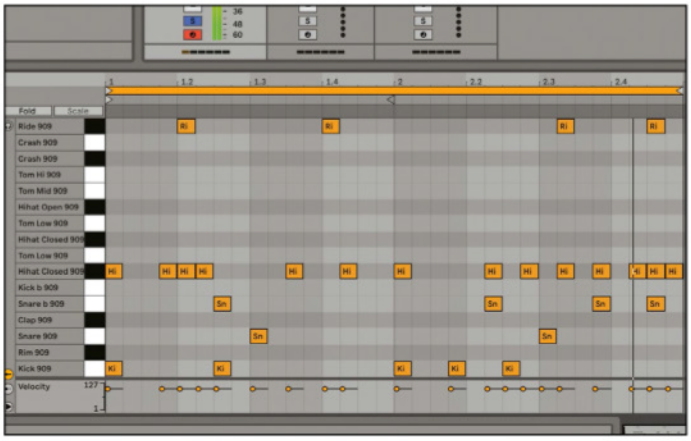
5 > What really lifts trance, though, is some manic hat action where you put a closed hat on every 16th measure and then an open on every off-beat (deleting the closed hat on each). This gives it a classic, more frantic but still very much 4-4 feel.



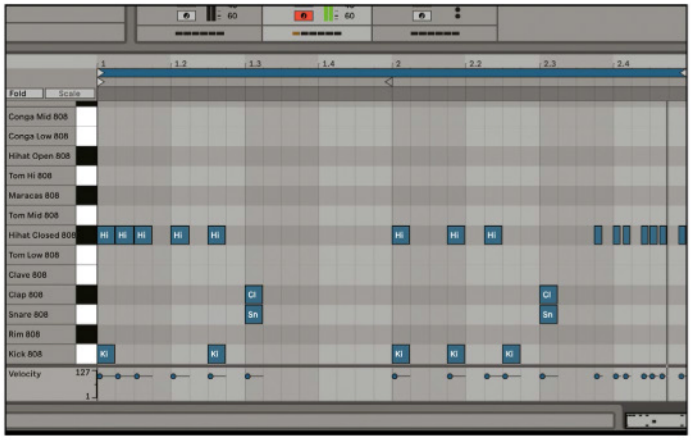
6 > We're finally moving away from simple four-four with **hip hop** but you do place a kick at the start of the 1st and 3rd beats and a clap on the 2nd and 4th. Then place the kicks as shown for more of a swing-like feel.



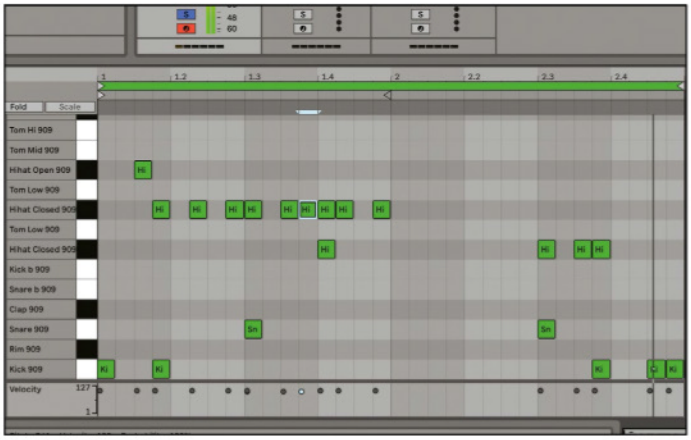
7 > The magic happens with the closed hats on every 16th note while on the last beat there's an open hat (again, delete the closed hats here). Even though there is a solid set of kicks in the pattern, it does now feel a lot more fluid than the beats we have previously created.



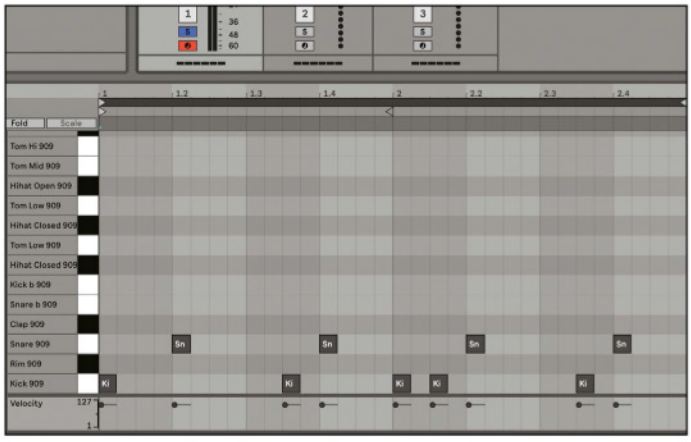
8 > **Dubstep** might not be as popular as it once was but is worth covering for its more intricate patterns. Here the kick is only on the first beat of each bar to start with and the snare on the third. Then add further kicks in the first half of the bar and, beyond that, it's up to you. The jittery hat pattern is key while the rides keep it in check.



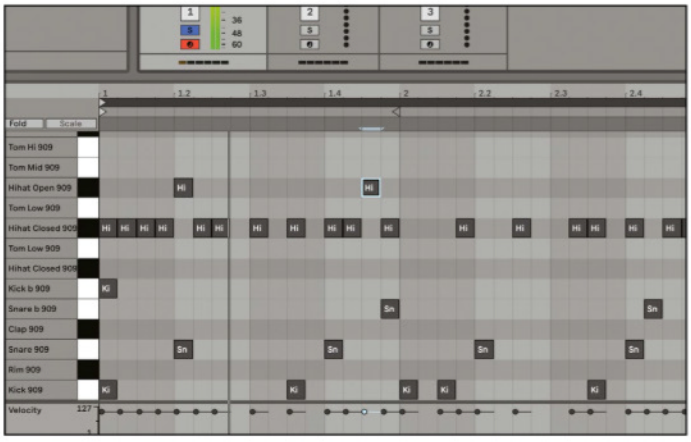
9 > Similar to dubstep, in that most of the action happens in the first two beats of the bar, **trap** also has its snare (and a clap) on the third beat. It also relies on hats for the interest beyond this, but the lack of action in the second half of the bar adds a great and dramatic lull on each cycle.



10 > With **grime** it's all about those tension-inducing gaps but this time the main one is the first half of the second bar: complete silence. Closed hats once again demonstrate their importance, and here's where you can really go to town by editing these for a completely different feel.



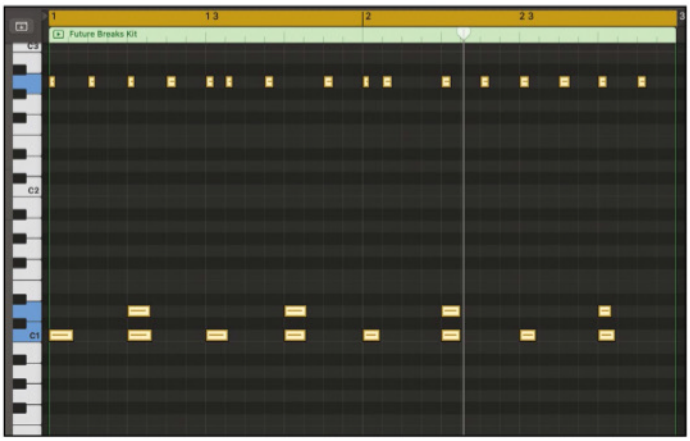
11 > With **drum & bass** we're really racking up the tempo; anything north of 160-170bpm. We'll start keeping it simple and, like previous genres here, we have a kick at the start of a bar and snare on the third beat. Then add the kicks as shown for the classic 2-bar loop.



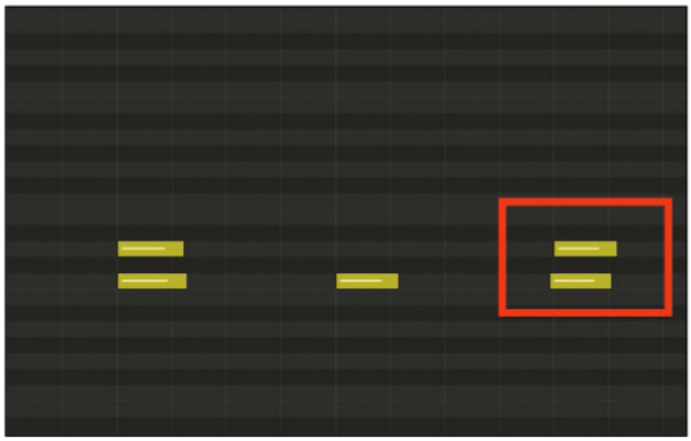
12 > Have we said hats are important already? Of course we have. Here they add a frantic top line and can be wherever you like but clusters are good. Remember, as with all of these patterns, use this just as a starting point and take it in whatever direction you can.

> Step by step

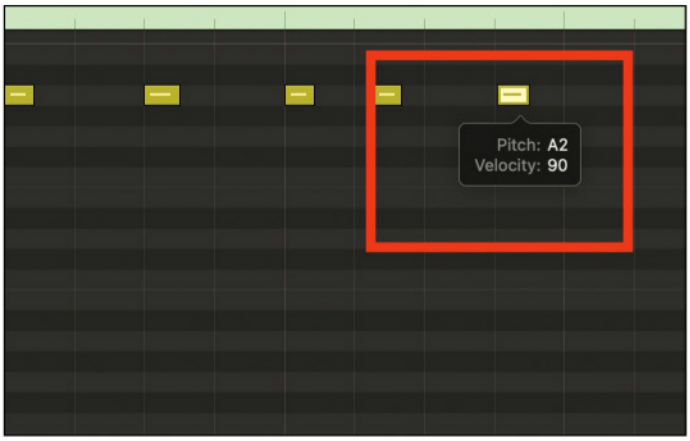
2. Adding humanity to electronic beats: timing, dynamics, fills, ghosts and swing



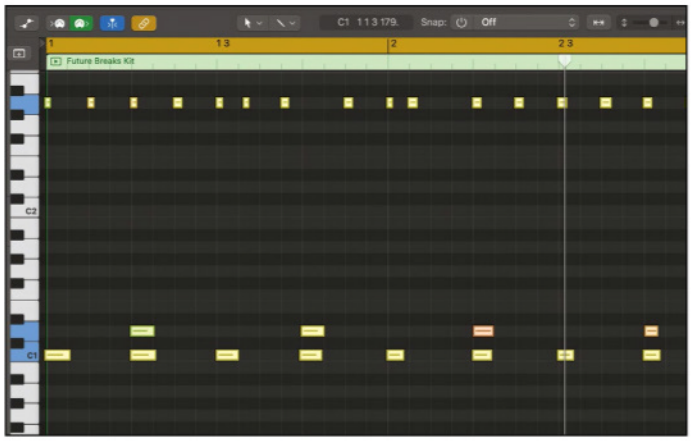
1 > The most common complaint when using DAWs is that beats produced within them are simply not human enough. Here we have some very quick-fire tips to introduce more of a human groove into your static beats. Start with a simple kick-snare pattern with the kick on every beat, the snare on every other and a simple hat pattern.



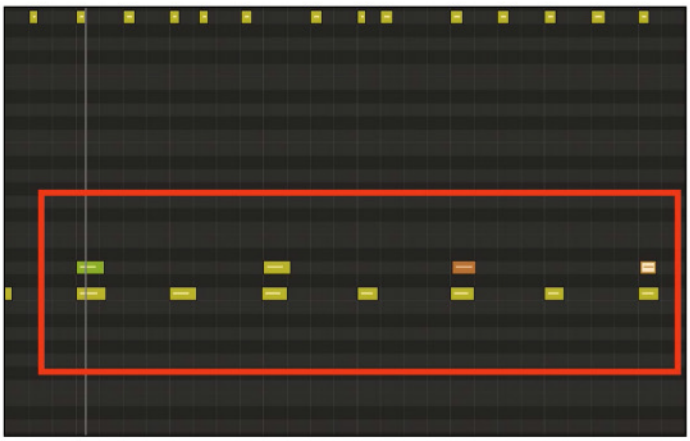
2 > The rigidity is caused simply by the fact that the beat has been quantised to within an inch of its (human) life. The first thing to do is undo some of that rigidity by switching your snap off and shifting notes very slightly away from the beat, introducing (very) small drift in the kick and snare. Be very subtle otherwise it simply sounds like it's been played badly!



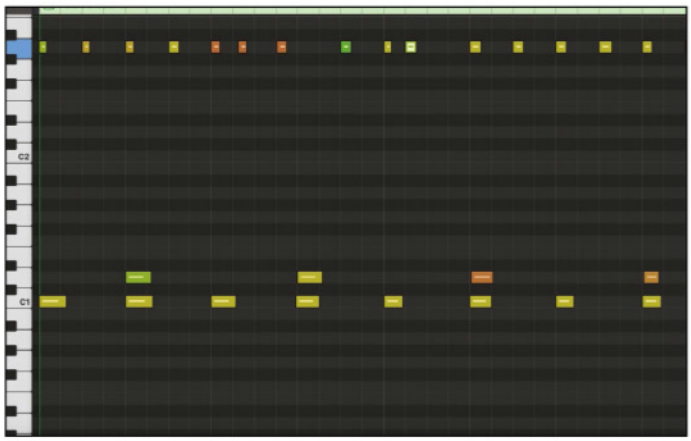
3 > Already just shifting the odd kick or snare gives the beat a less machine-like feel. But in this case, changing the hat positions in a similar way takes it further simply because they are at a higher frequency with a more obvious attack. And for this reason you have to be even more subtle with your shift (as shown).



4 > Taking this further, you can emulate a real drummer's playing by mimicking the push and pull of whole sections of beats. Introduce a delay (10ms) on one part so they play (very slightly) behind the beat, or push the notes back by around 30ms so they play before it. This latter option gives more energy to a track's rhythmic feel.

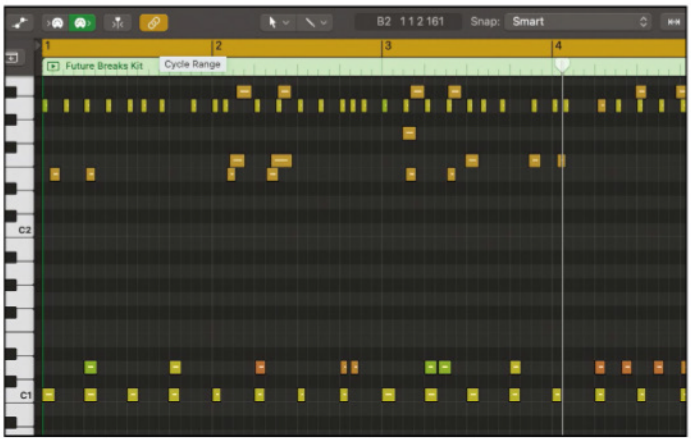


5 > Programming drum machines often leaves you with every beat sounding identical because the velocity is the same; so changing this up can produce a more human feel. Here we adjust the velocity of the snare by +/- 10 on the first, third and fourth beats.



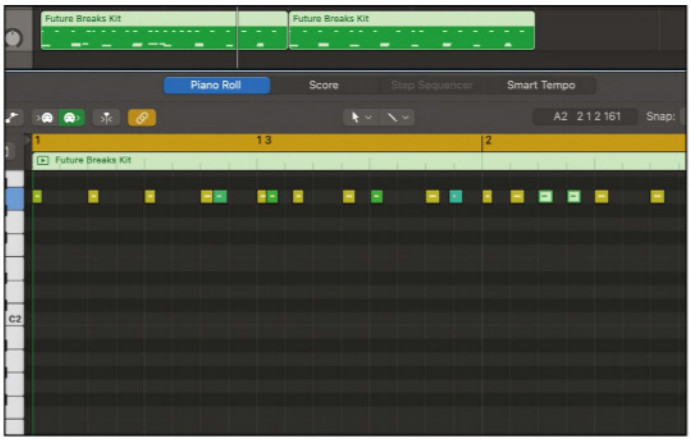
6 > Again, using the same process with the hats is more dramatic, too much so in this case. You have to be more subtle with the changes – perhaps +/- 5 across the pattern. In our case it just sounds a bit like the drummer's had too much to drink.

7 > Our beats are starting to sound more human but are still basic. You can really switch up the 'real' content by adding fills and extras on each beat – basically you want to stop it sounding like the loop that it was, so variation across bars is key here.

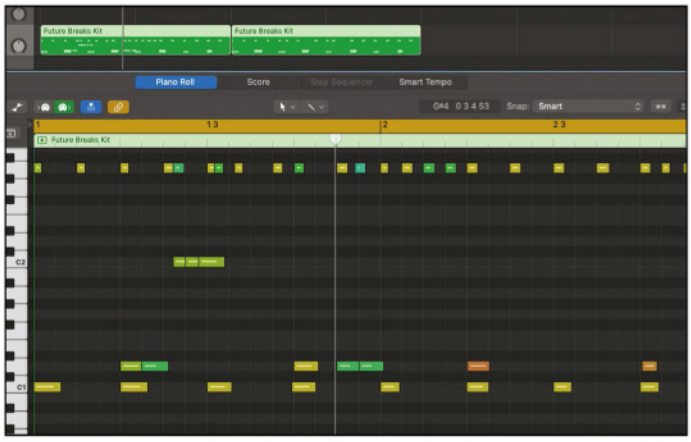


8 > You can, of course, take this way too far as we have done here, and the simple rule is that a drummer (usually) has a maximum of two legs and hands to play so keep your programming within the realms of this physicality and it should feel like a human is hitting the drums rather than an octopus.

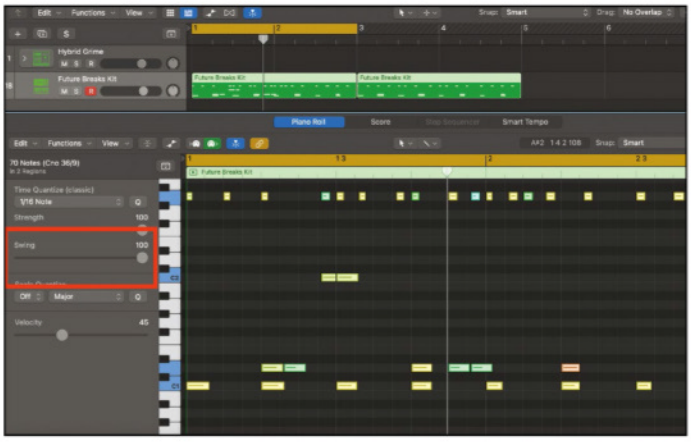
9 > We'll take the fills thing a little further now and introduce some ghost notes to our pattern. These are repeated snares and hats, for example, that are used as mini fills but tend to have a much lower velocity than the first hits of either sound.



10 > It's starting to sound much more human now but you can really go to town here, for once not being too subtle with the hats, for example, as long as you keep the velocities of the ghost notes fairly low in comparison to their proceeding notes.



11 > Finally let's take a quick look at swing, which adds a more free-flowing feel to any swung notes. These are dependent on how you have the notes quantised in the first place. Ours is 16-note so swing only applies to notes on the 16th note. Here's ours before swing...



12 > And here it is at maximum swing. Note that only the toms and hats have moved as they were on beats that fell on the 16-notes – the rest were on the 8th note. Experiment with quantise and swing values at different timing and you can get some humanity, very quickly.

6 of the best free drum plugins

Synsonic **BD-909/808**

Mac/PC

Two for the price of none as Synsonic provide a couple of iconic drum machines – or their sounds – for free. OK you don't get the complete kits but you do get perhaps the most important element, the kick, from each machine. And you can sculpt each one, so as these are the kicks that started (or, uhm, kick-started) a generation of dance, this is a must download.

www.synsonic-instruments.com

Steven Slate **SSD 5.5 Free**

Mac/PC

We've already featured the paid-for version of Steven Slate Drums – a lovely bombastic set of drum kits with a huge number of sounds and styles – and this is the cut-down single (Deluxe 2) kit-free version. You get three kit presets and, as you'd expect with Mr Slate, the recording of the sounds is immaculate and there's plenty of control over them.

www.stevenslatedrums.com

Pepto Audio **DR-84**

Mac/PC

Pepto Audio's freebie goes off road compared to other titles here in that it focuses neither on electronic classics nor acoustic drums but some more obscure machines. You therefore get the sounds from Simmons and Linn Drum machines plus the Oberheim DMX, E-mu Drumulator and Yamaha RX1 over 14 kits. Great if you want beats of a slightly different nature.

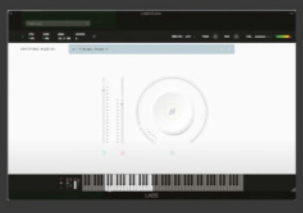
www.peptoaudio.blogspot.com

Native Instruments **Beats (as part of Start)**

Mac/PC

It's easy to forget that NI do so many freebies as part of the constantly evolving Komplete Start single download. Beats gives you five instruments and a bunch of drum loop production kits and is more flexible than it looks. You should also be reminded that Start gives you eight other instruments and seven synths too – for free!

www.native-instruments.com



Spitfire Audio **LABS Drums**

PC/Mac

There should be a rule that we never do a freeware roundup without mentioning LABS. This is, lest we forget, Spitfire's free instrument collection with its feet in just about every camp. Drums is just a single kit but you know it sounds amazing and is superbly recorded. And one kit can go a long way. Just ask a drummer.

labs.spitfireaudio.com

Monster DAW **Monster Drum**

Mac/PC

We're not going to argue with a drum ROMpler that has the word 'Monster' in its title – twice – and Monster Drum is not just one of *our* favourite freebies. It regularly gets voted top over at KVR and has a look and set of sounds for every genre you can imagine; making it one of the most flexible (and colourful) drum machines around.

www.agushardiman.tv

evo 4

2in | 2out Audio Interface

2 x EVO Mic Preamps | High Performance Converters

Smartgain | JFET Instrument Input | Speaker Outputs | Headphone Output

Ultra-Low Latency | Monitor Mix | Loopback | USB 2.0 Bus Powered

evo

AUDIENT

6 of the best electronic drum plugins

Your DAW might have 808/909 sounds but these machines will drive your electronic ambitions higher

Wave Alchemy **Triaz**

Mac/PC £99.95

Triaz is one of the newer releases here and throws in a huge library of 10,000 sounds, great sequencing and a triple-layered sound engine to let you sculpt beats like never before. The core concept and feel is very electronic but there's no reason you can't throw your own samples in here and take it where you like.

www.wavealchemy.co.uk

UVI **BeatBox Anthology 2**

Mac/PC $149

In many ways, BeatBox Anthology 2 is the ultimate electronic drums resource as it has all the sounds – 11,000 samples in all – from over 100 drum machines from over 50 years of beatmaking. If that lot is not enough, there are pretty detailed sound-editing options, layering flexibility and a built-in sequencer. It could be the history of electronic beats you need in one (big) library.

www.uvi.net

Native Instruments **Battery**

Mac/PC £179

Not exactly a new title but NI have kept Battery fresh over the years with updates and library extras – and it was so good to start with that it is still the number one tool for many. It's not specific to electronic beats – it is a sampler that can play back anything – but what it brings to the beats table is still valid. Great editing, easy workflow and amazing kits. But surely worth an update soon...

www.native-instruments.com

D16 Group **Nithonat, Nepheton & Drumazon**

Mac/PC €99 each

These are some of the best XOX recreations. With Nithonat (606), Nepheton (808) and Drumazon (909), D16 have taken core elements of the original Roland units but redesigned them to fit in with 21st century music making. So the UIs are less restricting and there are one or two added extras for sequencing and random beat making. A group deal (€349) includes Phoscyon 2 (the 303!).

www.roland.com

XFer Records **Nerve**

Mac/PC $199

Nerve is old, OK, but it still caters for the beats of today (which are often even older!). And unlike other tools here, it's not emulating hardware but coming up with completely new sounds or editing existing ones for beats you might not find elsewhere. Forget the age, and prepare to dig deep for some real beat benefits.

www.xferrecords.com

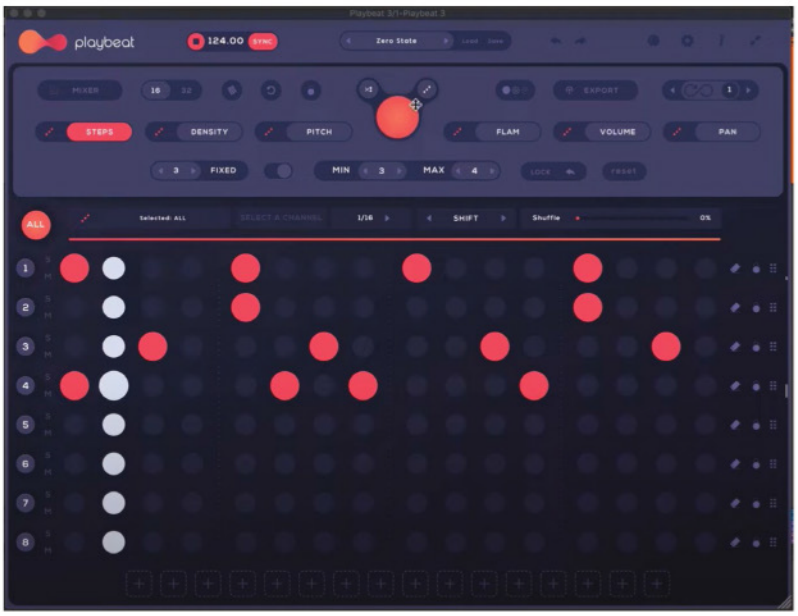
Roland Cloud **Mac/PC from $2.99/month or £148 each**

How could we not cover the classic Roland TR-808 and 909 (and the 606, 707 and 727 while we're at it)? The truth is that many of these classic beats are accessible as samples within many DAWs but these very slick plugins from Roland will let you twist and turn those sounds just like the original hardware, but for a lot less cash.

www.roland.com

6 of the best more 'out there' drum plugins

The best more leftfield drum plugins and collections to take your beats out of this world and beyond



Audiomodern **Playbeat 3**

Mac/PC £50

The latest version of Audiomodern's beat provider is full to the brim with algorithms – SMART ones, in fact – that put it firmly in AI territory. It monitors how you make beats (don't worry, not with a camera) and then suggests new ones in a similar style or completely different ideas. Whether this is good for humankind, we're still not sure, but there's no denying how well Playbeat does its thing and how inspirational it is.

www.audiomodern.com

8Dio **Extreme Ensembles 10 Drum Machines**

Mac/PC $25

8Dio's big idea is to put a large number of instruments in a large hall and record them. This one is 10 drum machines and the results are better than that sounds. It's more sample collection than instrument – hence the low price – but for fans of drum machine madness, it doesn't get, well, madder.

www.8dio.com

Sonic Charge **Microtonic**

Mac/PC $99 + VAT

An oldie, but a goodie, this is a drum synth that uses no samples to come up with a magical set of tweakable sounds. Put it on a track and it plays preset or new beats in time. You can then twist and turn them as you go, creating snake-like filter action and loops that still sound 'out there' after all this time.

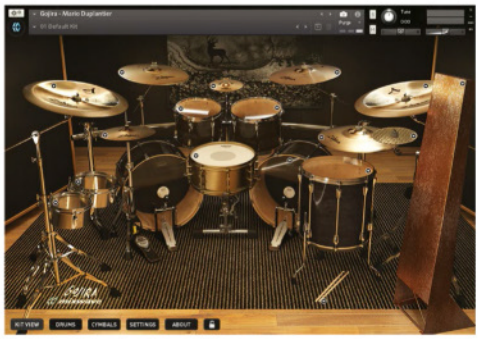
www.soniccharge.com

Output **Movement**

Mac/PC £131

We've always loved Output's instruments as they show you a little of life on the edge, and Movement is no different. It creates rhythmic effects using different engines and plenty of modulation. You can put whatever you like in it and it will 'rhythm it up'. Put beats in, then, and you'll get your rhythmic beats back. Movement is fairly old but deserves a bit of a comeback.

www.output.com



Mixwave **Gojira: Mario Duplantier**

Mac/PC £109.39

French metallers Gojira have been around for so long that their drummer Duplantier gets his own plugin! The emulation of his kit can, of course, be used for any kind of music, but that would be missing the point. This is for those killer, driving beats with way too many snares. Well the kit includes three, so why not use them?

www.mixwave.net

IK Multimedia **MODO Drum**

Mac/PC €199

MODO goes for a modelling approach to create its beats which means that it can be more flexible. So while it clearly starts off with acoustic kits for rock, pop and country (and they're all great) you can take it off-road and go where you please soundwise. One to experiment with, and you really should.

www.ikmultimedia.com

> Step by step 3. Mixing drum parts

1 > Now we're going to cover some typical mixing scenarios that you might find while dealing with different parts of the drum kit. We'll cover some of the processes you might need which apply to both live drum recordings or audio samples for all parts of the kit. We have our kit recording from top (kick) to bottom so you can see the parts.

2 > One of the first things you might experience, with live recordings in particular, is spill between tracks, and this is where a noise gate comes in handy. Here the Toms have spill so we set the Threshold at -18dB and Release quite high (experiment with these) and the Look Ahead to 6.6ms. The gate stops all the spill above the set level.

3 > We'll now turn our attention to each part of the kit. It's the kick first and we now realise our original recording didn't have a lot of beef; so it's either time to consider re-recording it or processing it further. EQ will certainly help. Put a low-cut filter on first (set at 30Hz to remove ultra low frequencies) and then push the 70Hz region to add bite.

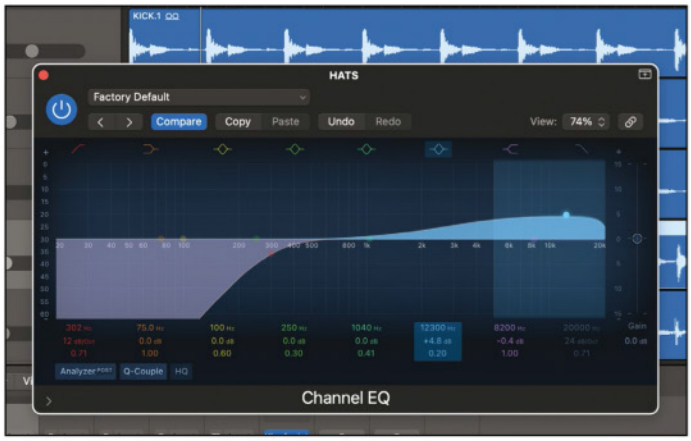
4 > There's a lot you can do to add impact to a kick in surprising frequency areas (it's not just the bass). Boosting at 5kHz or thereabouts can give you a nice click, while cutting between 150Hz and 5kHz increases clarity. Experiment though, as kicks can be wildly different but try settings like these to start with.

5 > You should have a compressor on the kick channel which will help you control not only levels (if it's an erratic recording) but also transients and attitude. We set the ratio to 9:1 and the Attack dial at 90ms for a fairly pleasing and level result. Again, experiment.

6 > We've set up two snare mics for our live recording, so almost inevitably we get spill between the two. It's a matter of inserting a noise gate again. Try similar settings to when this corrected the tom issues. Now you know why people like to use acoustic sample libraries!

7 > Of course, mixing drums isn't just about tackling individual elements but mixing them together. So we'll now get the snare to sit better with the kick. Let's put a high-pass EQ on the snare set at 50Hz up to 150Hz – remove frequencies below it which should make both sounds more distinct.

8 > With two snares, we raised the HP filter cutoff to around 150Hz for the second, and boosted both in three different areas of the mids and highs just to help them sit better with the kick. At this point you can add a small amount of reverb (or large amount depending on your genre) just to give either or both snares more life.



9 > Now bring the hats in and it's pretty easy to get them to sit well with the kick and snare. You've probably guessed we'll remove any low frequencies but this time set the high pass higher at around 300Hz. Give it a boost at around 14kHz to add that magic 'air'.

10 > We love a nice tom sound – especially those synthetic ones from '70s quiz shows – and fortunately ours has already been processed with the gate to keep it on a leash. Do add some EQ boost in the low-mid/mid range to give them a lift, depending on how they're sitting with the rest of the mix.

11 > You don't need to go too wild with your panning. The kick and snare can be central as they should already be sitting well together, and the toms and hats can be slightly panned either way. If you have any room mics for live drums, pan them each way too.

12 > Finally, a touch more EQ applied across the drum bus gels all of the sounds together. Again, don't go overboard here as you might need to EQ further down the line when other instruments are mixed. This is a good time to try other EQ types for more creative gelling.

6 of the best acoustic drum instruments

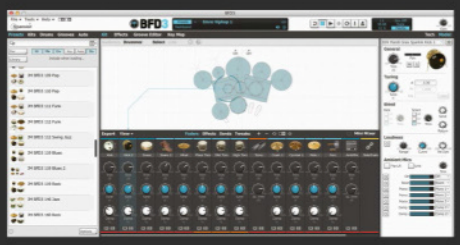
You want real drum and kit sounds as opposed to electronic 808s and 909s? Hit these ones up...

Toontrack **Superior and EZ Drummer 3**

Mac/PC €99 to €179

Choose EZ or bigger brother Superior Drummer and buy into an ecosphere of drum kits, sounds and MIDI grooves for every genre and style you can imagine. You get drum content by the bucketload, most of which sounds stunning, and all the groove-based files you need to create hugely realistic drum patterns with ease. These have made grown drummers cry, 'cos you may never use a human again.

www.toontrack.com



FXPansion **BFD 3**

Mac/PC $29

Some of these have been around for a while, but there's a reason they're so enduring and BFD is a case in point. This was so well put together on release that it's still one of the best ways to get acoustic drum kit sounds and playing, short of getting a session player in. With 50GB of content, and loads of mic and recording options, it set a standard that's still hard to beat.

www.fxpansion.com

Native Instruments **Abbey Road Drummer**

Mac/PC £89 or £179 for 6

Just as we lazily lumped EZ and Superior together, we're doing the same with six titles from NI here. These take in everything from Vintage and '50s drumming right through the '70s and '80s up to the Abbey Road Modern Drummer, all recorded with great kits in the best studio ever. Get all six together for a massive saving too.

www.native-instruments.com

XLN Audio **Addictive Drums 2**

Mac/PC €159 to €499

It's nearly a decade old (and looks it) but Addictive Drums is probably the only title here that comes close to Toontrack's EZ series. Like that, you can choose drum kit sounds (ADpaks) and styles (MIDIpaks) over various genres, all recorded and played impeccably. Not cheap, but €159 gets you two of each genre. Just don't get addicted...

www.xlnaudio.com

Steven Slate **Drums**

Mac/PC $120

There's a bit of a Superior Drummer vibe going on here and while you don't get quite the girth of that software, you do get some great in-your-face kits, sounds and playing via 2,400 MIDI grooves across various genres. It's pretty easy to use too, with a simple mapping tool to assign sounds and a quite decent mixer.

www.stevenslatedrums.com

Goran Grooves **Handy Drums**

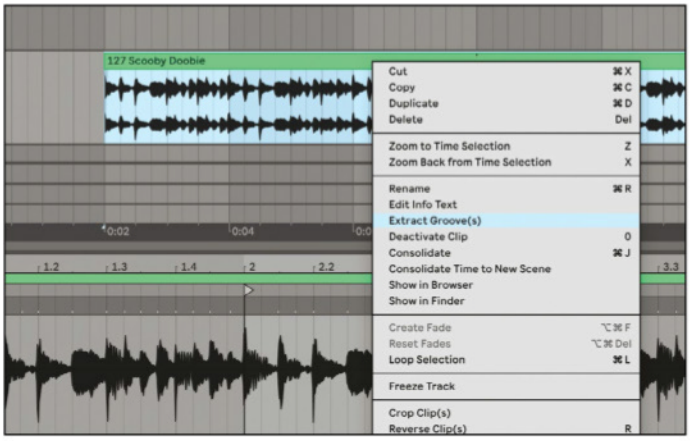
Mac/PC €199

They might look simple, but these plugins really are filling a gap by matching beats and kits to produce perfect beat solutions for a wide range of styles. You get Rock Standard, World Percussion, Jazz Standard, Reggae Standard and more. All contain everything you need for the perfect drum mix.

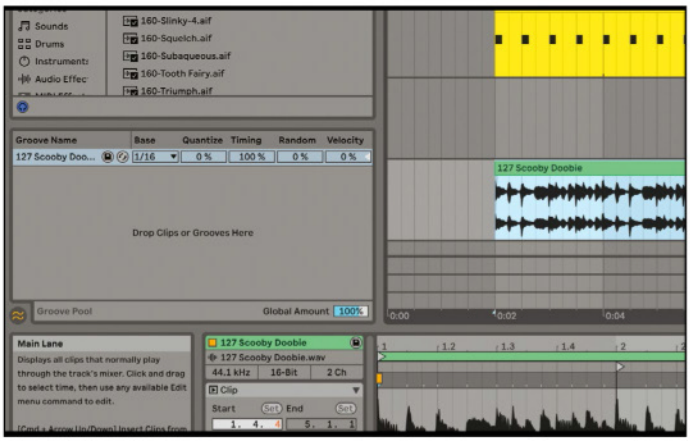
library.gorangrooves.com

> Step by step 4. Kick processing techniques

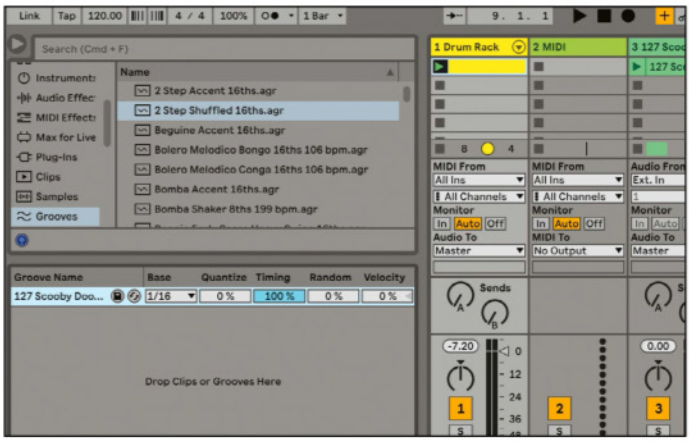
1 > The kick is the most vital part of your beat arsenal, so here we'll cover some key techniques to keep it carrying your tracks. First we're going to mix up some electronic MIDI kicks with acoustic audio kicks. Load up an electronic kick drum into a sampler and record a 4-4 loop. Then load your acoustic drum loop in on an audio channel.



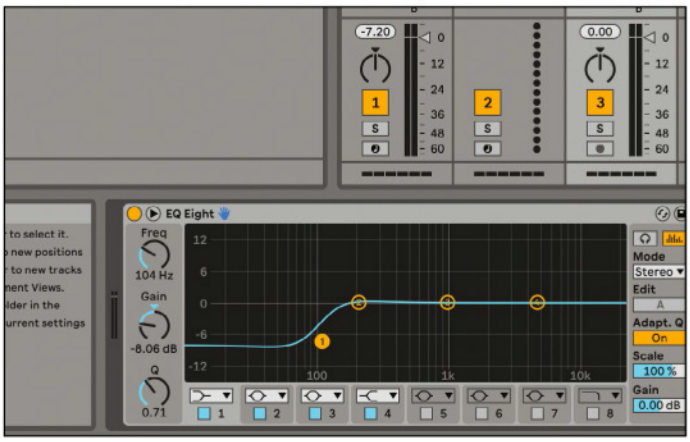
2 > Your 4-4 loop might be too quantised for the acoustic drum loop so the first thing we'll do is match its timing to the acoustic beats. In Live (shown above, but also possible in other DAWs), you can extract the groove of the acoustic loop. Right (Control) click on the audio part and select Extract Groove.



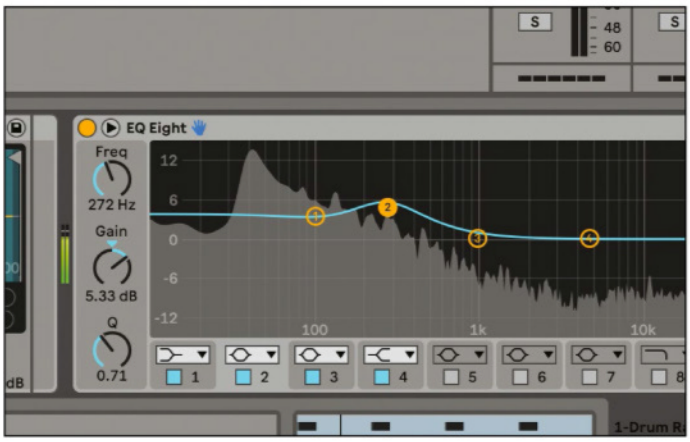
3 > Live analyses your audio file and depending on how long it is, will eventually come up with a Groove which is then stored in the Groove Pool (with a name matching that of the audio file you extracted it from, in our case Scoobie Doo).



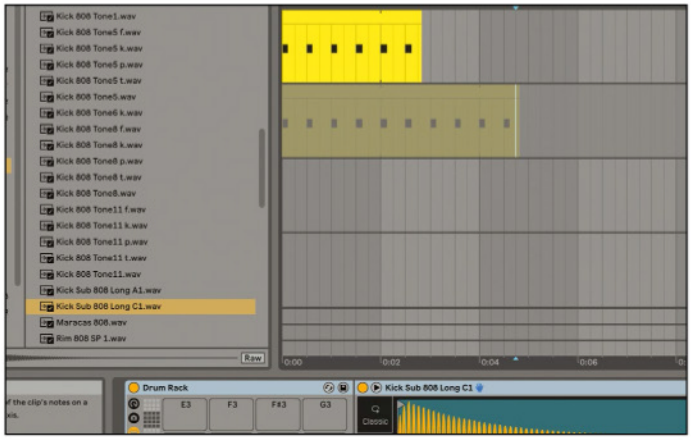
4 > Now you can simply drag the newly created groove onto your MIDI clip and the kick drums within it will shift to match that of the audio groove. This is a great way to add more feel to any rigid 4-4 beats and you don't have to just apply it to kicks, but anything you like!



5 > Now that your kicks are playing in time, they may clash so it's time to apply a small amount of EQ to either or both, to make them stand out. You could simply apply a low shelf EQ to the acoustic loop. We found setting it at around 100Hz helped here, but experiment.

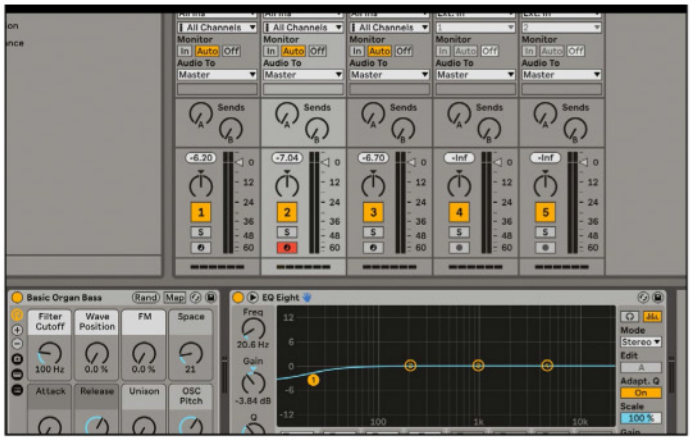


6 > You can also use EQ on the electronic drum part too – this time try nudging it up, away from the other kick. We found that a nudge around 270Hz gave our electronic kick a nice click that stood out against its acoustic counterpart.

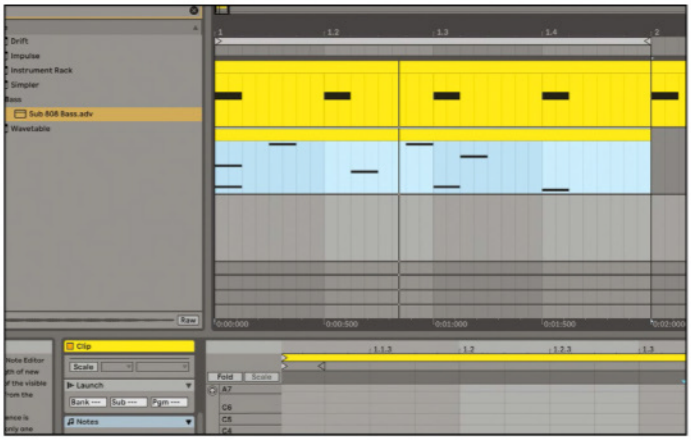


7 > We can employ a similar technique when mixing kick and bass. This can be used when layering an 808 sub or kick sound with a standard kick to give it more clout, or distinguishing a standard melodic bassline from a kick drum. Replace your audio loop with an 808-style low sub sound and match it in time with the original kick.

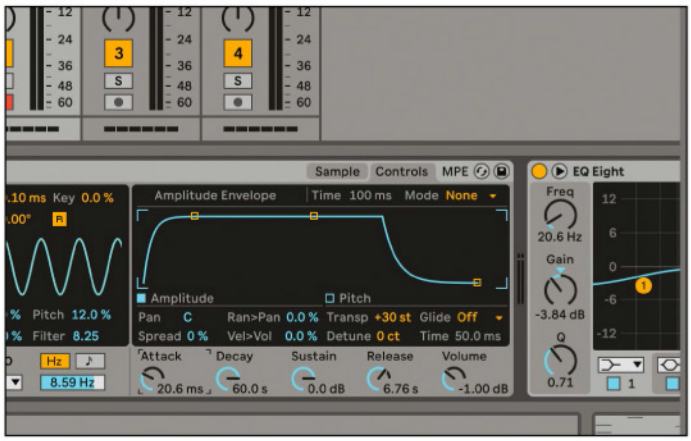
8 > Firstly, use a high-pass EQ on the electronic kick to remove the low frequencies clashing with the sub; this allows the sub to occupy that space on its own but you can still enjoy the sound of the electronic kick. We had to experiment with ours, bringing a slight notch down at 100Hz for the sub to stand out too.



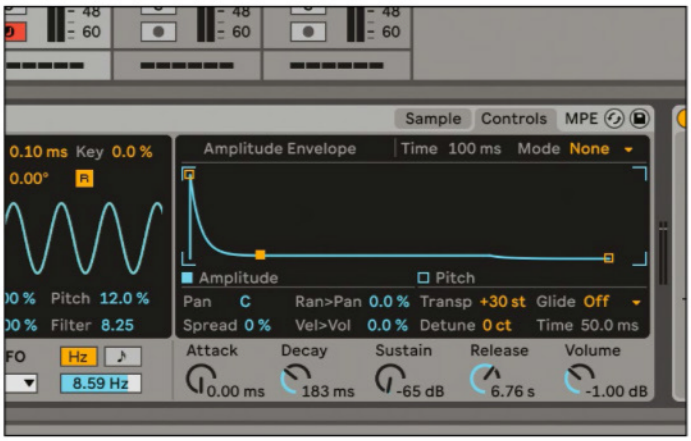
9 > This technique can work well when mixing melodic bass sounds with kick drums. Some parts of their frequencies clash, so reduce one and (if necessary) raise the other. Here, on an organ bass, we have put a low shelf on the organ, for example.



10 > We can use an envelope technique to achieve a different way of mixing two bassier sounds together. This time we've loaded in a melodic sub bass sound and recorded a bassline to go with our original kick sound.



11 > Open up the envelope page in Simpler. If you set the Attack value to 20ms – even though we can't generally hear any timing differences less than 30ms – it makes both low end sounds more distinct from one another.



12 > Adjusting the kick's envelope values will also help distinguish the two sounds. Set the Decay to around 150ms to tighten the kick sound up and make it punchier. We've used Ableton Live in these examples but the theory should hold with whatever DAW you use.

Waimea
Poipu
Sunset Beach

JESSY LANZA

The Canadian producer adding a strange, techno twist to neo soul

> Jessy Lanza is one of those people who has spent much of her life in or around her hometown and has a particular relationship with it. Hamilton, Ontario is just over the Canadian border from Niagara Falls, on the shore of Lake Ontario, and also hemmed in by Lakes Huron and Erie. Much bigger cities like Toronto and Detroit are nearby – we're talking North American distances, not European – but so is the Canadian wilderness.

"You don't have to go far out of Hamilton to be in the middle of nowhere," laughs the 37-year-old producer. "When you commune with nature in Canada, it can sometimes feel kinda overwhelming. There was a sense of space and melancholy that definitely filtered down into the music I make... songs with a sense of longing."

Those songs were first gathered on Lanza's acclaimed 2013 debut album, *Pull My Hair Back*, co-produced by Junior Boys' Jeremy Greenspan, who just happened to be a Hamilton neighbour of Lanza's. An album of burbling, ethereal soul set to a pared-down, almost techno-y soundtrack, *Pull My Hair Back* made the shortlist for that year's Polaris Music Prize (Canada's version of the Mercury Music Prize) and led to a collaboration with another Ontario native, the Grammy-nominated Caribou.

Lanza had definitely made her mark. Two more albums – 2016's *Oh No* and 2020's *All The Time* – were followed by a spiffing DJ-Kicks collection in 2021, but recording became increasingly difficult after Lanza moved out of her family home because... well, she no longer had a studio.

Photo: Jenia Filatova

"Although you can do a lot inside the computer, I still like to use my analogue and modular synths," Lanza explains further. "Writing, for me, is often about sitting in the studio for a few days, recording everything that happens. When you don't have a permanent setup, that isn't easy."

After leaving Hamilton, Lanza moved to San Francisco, then New York for a while, then London, stayed with friends, and recently set up home in LA. The latest album, *Love Hallucination*, was literally put together on the hoof. Most of the vocals were recorded 10 feet off the ground in her brother-in-law's childhood treehouse in San Francisco!

cm: A treehouse? Was that another attempt to commune with nature?
JL: "I suppose it did feel a bit like that. Sharing my space with birds and other wildlife. The room was actually much nicer than it sounds – a luxury treehouse – but recording the vocals did create a few problems. I gathered every spare duvet I could lay my hands on and had them covering the walls. Trying to get some sort of soundproofing. In the end, it didn't really matter because the vocals got so messed around once they were in the computer. I wasn't looking for the perfect 'one take' vocal. In fact, I don't think I've ever done a perfect one-take vocal in my life. Part of the fun of recording is seeing how creative I can be with my finished vocals."

cm: Creative with effects plugins or just tinkering around with the audio?
JL: "A bit of both. Digging into the audio and pulling out the bits that I like, then really getting right down into the waveforms. The main plugin that I tend to use for vocals is iZotope's Iris. Some people might find that a little odd because Iris is a sampler rather than an actual effect plugin. These days, though, the jobs kind of cross over. You can put a piece of audio into Iris, then dial into the waveform and do all sorts of crazy stuff. EQ, filtering, pitch... it's a whole rack of effects."

Performing in Leeds in 2014; and this time, the synth made it through customs!

Andrew Benge/Redferns via Getty Images

iZotope Iris is more than just an effects plugin for vocals, says Lanza

cm: Did writing and recording in all of those different places affect the sound of this new album? Your previous albums seemed to have had a lot of analogue input... the Juno, Polymoog, some vintage drum machines. Did they get left behind during all of the studio moves?
JL: "Y'know what, it didn't really affect things at all. Well, it affected the recording process, but it didn't affect the music. Songs got started in Logic and Ableton on the computer, but then I was lucky enough to spend time with Jeremy [Greenspan] in his studio. He's got a whole room full of great synths. I also worked with David Kennedy [aka Pearson Sound] at his London studio. I still had access to some analogue gear even though most of mine was in storage for five years.

"I'm pretty much settled in LA now and I don't think I'll be moving for a while, so I got my gear back from the storage guys earlier this year. Even though it had been in the one place, some of it still refused to work. I guess that's what you expect with analogue synths. And what made things even worse was when I did try to take my Juno on the road for a few dates, the airline actually lost it."

cm: Losing your undies and socks is bad enough, but losing a Juno!
JL: "I was desperately trying to explain what it was and how important it was to me, and all the sounds I'd got saved in there. After a month, they finally located it. I was reminded of those stories about DJs checking in a box of treasured vinyl at the airport and never seeing it again."

cm: You came to electronic music via classical, jazz and '80s R&B. Not the most obvious route.
JL: "My parents were into music and my dad was kind of involved in the music business. He had a studio setup at home and ran a PA company. They wanted me to learn an instrument, so I did what my parents wanted. I studied classical piano and played a lot of clarinet. Emotionally, I didn't really connect with music while I was studying; I suppose I was just going through the motions. But I did enjoy the competitions because they gave me a chance to 'perform'. They were so frightening! You're a young kid, getting on a stage in front of a hall full of people, trying to steady your nerves and play music."

cm: When it came to making electronic music, did all of the classical studying help or did it get in the way?
JL: "No, it definitely helped. OK, you have to be careful because you can get carried away by theory. That's the progression I want, but it's against the rules, so I must change it. But what those years really taught me to do was listen. Especially when I started concentrating on jazz rather than classical. Why do those chords work? Why does that bassline work? When I first started recording, I made a lot of mistakes because I was simply trying to emulate the songs I liked. Luckily, I was a good listener and, bit by bit, I was able to shape the music the way I wanted."

"I was a good listener and, bit by bit, I was able to shape the music the way that I wanted"

Photo: Milah Libin

cm: Did you know how you wanted your music to sound?
JL: "Ha ha! This is the crazy thing... I had no idea. There was that vague idea of melancholy I was talking about. And space. So much of my early songwriting was about stripping things down, making room for the song instead of trying to fill up every second with noise.

"A big moment for me was hearing *Lifestyles of the Laptop Café*, a 2001 album by The Other People Place. [Released via Warp, the album was put together by Detroit producer, James Stinson, also part of the hugely influential Detroit/Michigan collective, Underground Resistance. Sadly, Stinson died a year after its release, aged just 33.] It's an album of 'proper songs' with vocals, but they completely tear up the rulebook when it comes to structure and space. That album made me realise you can write songs with texture, as well as melodies and words."

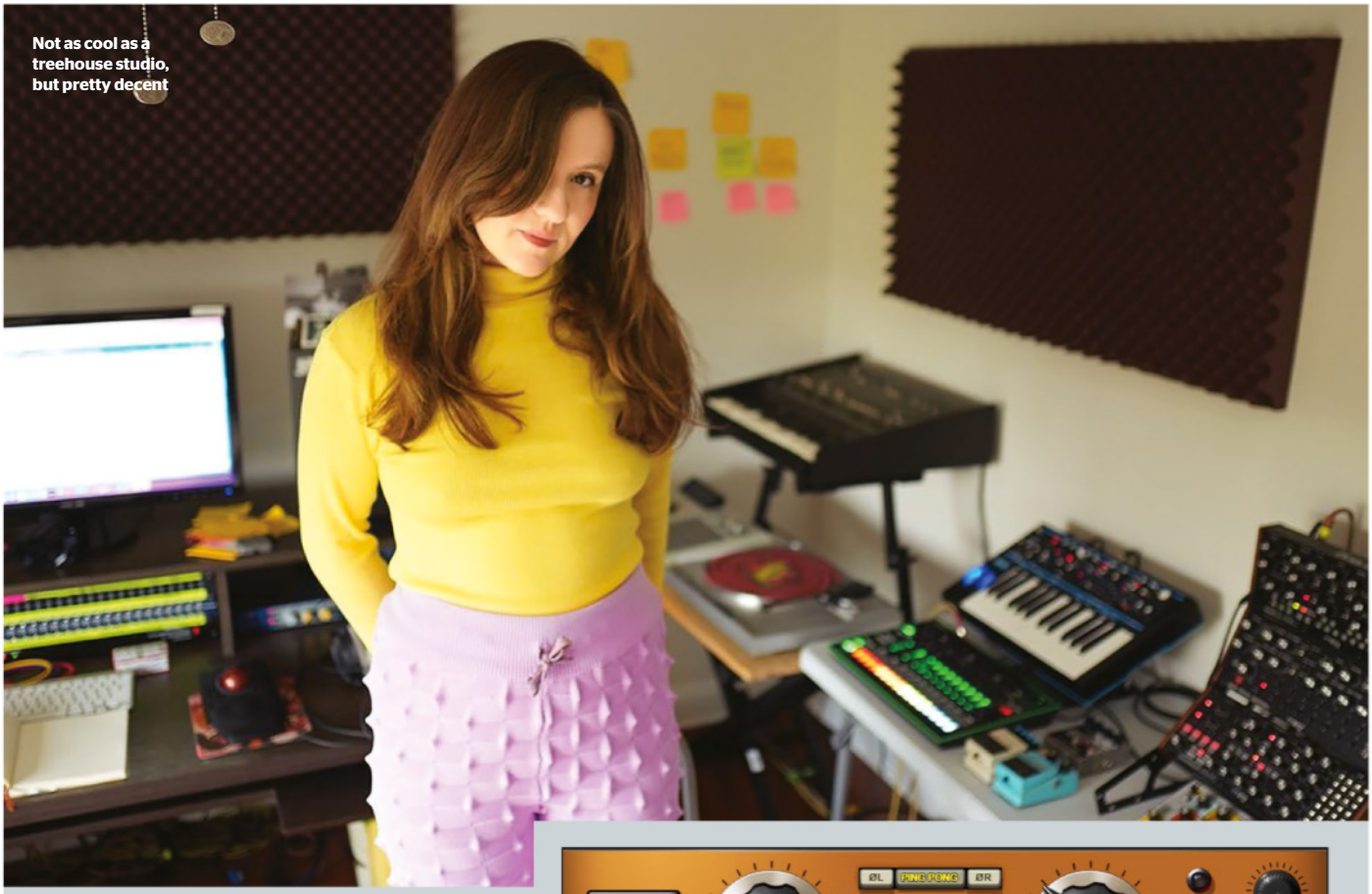
cm: Coming up via classical and jazz – lots of theories and finger exercises! – how easy did you find it to make music on a computer?
JL: "It was difficult at first because I was figuring out all this stuff on my own. I was using a few of my dad's old synths and drum machines, but I had to rely on someone with a computer and a DAW to actually record stuff. Some of my early experiences were unpleasant. People who thought they knew what my music needed better than I did. From what my friends tell me, that has been a problem in the music business for many, many years.

"But then I met Kode9 [aka Scottish producer Steve Goodman, founder of the Hyperdub label which has been home to all of Lanza's releases]. He was the first person from the electronic scene who really gave me the time of day. And then I started working with Jeremy Greenspan at his studio in Hamilton, another key moment for me. Jeremy was also kind enough to set me up with a copy of Logic, which allowed me to finally take control of my own music and ideas. It was the wonderful moment that I'm sure every electronic music producer experiences: I no longer have to rely on anyone else."

> "The wonderful moment that every electronic music producer experiences: I no longer have to rely on anyone else"

cm: Are you still with Logic?
JL: "Logic for most of the work, Ableton for live and maybe getting ideas down if I'm in a hurry. They both have their strengths and weaknesses, but Ableton's File Tree really annoys me."

cm: It's sometimes those small things that make all the difference to whether you feel comfortable with a DAW.
JL: "I'm glad you said that because I wondered if I was just being picky. One of the issues I've had to really address over the last few years while I was moving from place to place was my admin skills. I would open up hard drives and I'd have all of these files with stupid names like, AAA, JJJJJJ, JJJJJJ2, THING. The entire drums from the first single on the new album, *Don't Leave Me Now*, came from one of those lost files. I couldn't even remember where or how I made them. My top tip? Label all your files in a way that lets you know what they are. You give it



Not as cool as a treehouse studio, but pretty decent

Photo: WinstonHCase

Kit list

HARDWARE
Universal Audio Solo/610
Juno-106
Roland SH-101
Crane Song IBIS
Eventide H3000

SOFTWARE
Waves H Delay, CLA-2A and F6 Floating Band Dynamic EQ
Soundtoys Decapitator
iZotope Iris

Imeh Akpanudosen/FilmMagic

some vague name and, five years down the line, you have no idea what's in there."

cm: Are the live version of the songs different to what we hear on the album?
JL: "Right from the start, I was always worried about how I could make a live show exciting for me and the audience. The vocals on the album are so heavily processed that there was no point in trying to recreate them on stage, but I've got a bunch of Eventide pedals that give me something to play with. I spend a lot of time dialling in the settings for different songs and then get Ableton to spit out all the info."

cm: You've started playing clarinet on stage. Can you tell us what led to that move?
JL: "It's actually the Roland Aerophone. I have to admit that it was a complete revelation for me, playing an instrument on stage instead of standing by the computer, looking like I'm answering my emails. I felt so much more engaged with the music, which I hope comes across to the audience. Even just being at home and practising scales was quite exhilarating."

cm: Can we expect a Kenny G duet?
JL: "Ha ha! The clarinet sounds aren't great, but the sax is pretty good. Who knows what the future holds? At heart, I am an old school soul-jazz-R&B girl. Think about what was happening with '80s R&B. You'd got dance music and soul coming into contact with all the new technology like sequencers, synths and drum machines. What's not to like?"

> "I always worried about how I could make a live show exciting for me and the audience... not looking like I'm answering my emails"

cm: Is that what you were listening to when you made this album?
JL: "Always. And my favourite album of this year is *Sundown* by Eddie Chacon. You remember Charles & Eddie? 'Would I lie to you baby?'. Sadly, Charles died in 2001 and it seems that Eddie really struggled with that loss for many years. This feels like a powerful, redemptive album. A real reminder of how much emotion music can carry. Wait till I tell you the song that first made me take notice of dance music... *Saturday Night* by Whigfield. I must have been seven or eight and I used to get so excited when the video came on TV. I'm sure people will laugh at me, but I don't care. It's a great, great pop song." **cm**

Love Hallucination is out now on Hyperdub

HEAR MORE

Don't Leave Me Now
bit.ly/jl_dontleave

Limbo
bit.ly/jl_limbo

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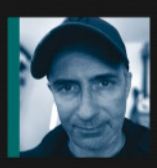
Synth Masterclass
with *Dave Gale*

48 10th bass with overdrive

Dave Gale teaches you how to create bass that occupies the bottom end whilst providing some major harmony



Mix Masterclass
with *Jon Musgrave*

52 Parallel compression

Jon Musgrave continues his masterly mix series; this time exploring how to add compression whilst retaining your original signal's sound

Download the accompanying video and the MIDI/audio files at **bit.ly/cm326downloads**

10th bass with overdrive

Sometimes you want a bass sound that not only occupies the bottom end, but provides some major harmony. We've got both for the price of 1!

Dave Gale

Dave Gale is an Emmy award-winning media composer, producer and orchestrator, with an enormous passion for synthesisers, in all their forms. His varied composing style embraces everything from full orchestral and hybrid scoring, to fully electronic scores, employing synths wherever possible. He also happens to own some of the finest synths in existence but we're not jealous, OK?

When early synthesisers started to become an affordable prospect, it didn't take long to work out that there was limited choice in the market – and they were all monophonic! Polyphonic synthesisers were still some way off, or exceptionally expensive to purchase, so it was left to the synthetic pioneers to create chords using more than one oscillator, using their mono-machines.

This was a charge firmly led by the classic Minimoog. Bedecked with three oscillators, it was possible to create a triad and play it up and down the keyboard. Just listen to *Autobahn*, by German pioneers Kraftwerk, for one of the first examples of this. But this is still a technique very much in use today; bands such as Hot Chip are well acquainted with the technique, with significant placement in some of their productions. Despite the fact that our ZebraCM plugin only provides two oscillators, we can easily manufacture a sound which provides similar traits. Part of the reason for this success with only two oscillators, relies on the reproduction of the root and third of a chord, commanding the listener's brain to fill in the rest of the harmonic content, to make it sound like a complete triad or chord. More with distortion.

We just need a synth with two oscillators and some overdrive. Luckily our usual u-he Zebra CM plugin from the CM Suite fits the bill!

> Step by step

1. 10th bass with overdrive

1 > We'll begin by initialising a patch on the ZebraCM. Open your DAW and load up the ZebraCM plugin. Open the plugin window, move to the central display at the top of the window and click to reveal the drop-down menu. Then select 'init' from the bottom, which will initialise the patch.

2 > This patch is going to be pretty loud, so take a moment to reduce your master volume on the ZebraCM to a level of 50. A gentle reminder, that every time you tweak a pot or setting on the plugin, you will see an accurate value/numeric in the upper display. We will use this as a point of reference throughout the tutorial.

3 > Now we can begin to sculpt our sound; move to the OSC1 section, where we'll use the default setting of a sawtooth wave, indicated by a value of 1.00 in the upper display. The volume should be set to a default of 100, which is perfect for our requirements.

4 > Staying within the OSC1 section, we're going to thicken the texture of the oscillator by selecting an aliasing value of 4. Click on the numeric so that it's highlighted in turquoise. We will also detune these waves, by adjusting the Detune pot to a value of 5.

5 > Now we can move along to OSC2; leave the waveform to its default of a sawtooth, but increase the volume to a value of only 73. We also need to adjust the tuning pot, so that it indicates a value of 28. This value relates to semitones, and places OSC2 a major 3rd, two octaves higher than OSC1.

6 > Keeping with OSC2, we can thicken the waveform texture by aliasing to the power of 2. Highlight this in turquoise, with a click. We'll also apply a little detune here too, by changing the Detune pot to a value of -3. As we only have two aliased waveforms, we do not need to detune to extremes.

Download the accompanying video and the MIDI/audio files at **bit.ly/cm326downloads**

> Step by step 1. 10th bass with overdrive *(continued)*

7 > We can now move over to the filter section; click on the Filter display, to reveal the drop-down menu, and select LP Vintage2 from the lower part of the list. Once selected, set the Cutoff pot to a value of 86. The sound will now feel quite dull, at least for the moment.

8 > We want to induce some filter overdrive, to add character to our patch. Set the Drive pot to a value of 18. We also want to create some filter-shaped bite at the front of our sound, so increase the default-assigned ENV2 pot, to a value of 63.

9 > To create some movement in our patch, we're going to induce some LFO-based filter modulation. Using the second of the user assignable pots, within the Filter section, set it to LFO1 using the drop-down menu located underneath the pot. Then set the pot to a value of 14. This will guide LFO in the direction of the Cutoff pot.

10 > Moving to the LFO section, make sure that you have LFO1 selected, in turquoise. We will leave the waveform set to its default of a Sine wave. Move to the Sync selection box, and select a value of 1/4 trip. This will then synchronise to 1/4 note triplets, with the speed of our DAW.

11 > Finally, we need to adjust our two envelopes. Beginning with ENV1, which controls the amplitude or volume of our sound, set the Attack pot to a value of 0, Decay to a value of 50, the Sustain to 100, and the Release to 26. This will provide harsh attack and full sustain for our sound.

12 > Now, move down to ENV2, which is heading in the direction of the filter cutoff; set the Attack pot to a value of 0, Decay to a value of 53, the Sustain to 0, and finally the Release to 17. Our patch is now complete, but it might be wise to add some compression within your DAW, to solidify that bottom end.

PRO TIP

SUB-BASS AND KICK

Without wishing to state the obvious, the more notes you have in a chord, and the thicker the sonic texture that a synth creates, the more space it will occupy in your mix. It's relatively inconceivable that one sound can do all the heavy lifting in an electronic track. It's a different prospect for acoustic instrumentation, the piano and guitar being good examples where they can orchestrate within a solo performance. The patch that we've created here does go quite a way to fulfilling the criteria of a bass sound, with harmony above. However, once you place it in your track, you'll inevitably want to EQ the bottom end, to sit with your kick drum. You'll be able to remove a considerable amount of harmonic content from this sound, and it will still sound very effective. As a consequence, it could be worth exploring the idea of placing a further bass sound underneath our patch, such as something which is very heavily filtered, so it acts as a sub-bass, to provide a very solid low-end foundation for our track. It will also be worth considering the rhythmic relationship between our sound, and the kick drum. Placed in the right rhythmic construct, this should be a formidable pairing!

Martin Ware of Heaven 17: the '80s icons made heavy use of harmonic constructions in their work

Clarissa Debenham / Alamy Stock Photos

Hot Chip's take on this idea inspired the column

Photo: Rob Monk

RECOMMENDED LISTENING

HOT CHIP
HUARACHE LIGHTS
As the track that provided the inspiration for our patch, you can hear the distinctive Minimoog 10th sound running throughout the entire song.
bit.ly/hc_huarache

HEAVEN 17
WE LIVE SO FAST
As a differing example, Heaven 17 used a more percussive and lighter 10th patch to run through their song, starting from the second verse on.
bit.ly/h17_wlsf

Download the accompanying video and the MIDI/audio files at **bit.ly/cm326downloads**

Parallel compression

Like the sound your compressor adds but want to retain some of the original signal's sound? This technique could be for you

Jon Musgrave

Jon is a London-based platinum award winning mixer, producer, composer and club remixer with a diverse CV that spans dance, pop, rock and music for media. He's also a long term contributor to *Computer Music*. Jon usually handles final mixdowns, which is why we've got him to share some of his pearls of mixing wisdom here

Compression is one of our core mixing tools, but there are many specific techniques that use compression in different ways, so we're allocating individual mixing masterclasses to each. This month we look at a very popular technique – parallel compression.

Parallel, or New York compression as it's sometimes called, is a mixing technique that blends a dry and compressed signal, and is particularly popular for beats, bass, vocals and even the master bus. The technique was first developed back in the analogue days and in its simplest form involves paralleling a signal across two channels, one of which you compress quite heavily and one of which you don't. You can then find a balance of the two signals, allowing you to benefit from the flavour the compressor adds but also retain some of the cleaner transients of the original sound. It's a very liberating technique, and if done properly, can really help position sounds in your mix.

In the plugin realm, parallel compression can be achieved quite easily by adding a global mix blend, and this option is readily available on many compressors. That said, this arrangement doesn't necessarily match the flexibility of using two paralleled channels. In this tutorial, we'll consider all of these aspects and look at the various ways we can set up and use this fantastic compression technique. Right then, let's get to it.

> Step by step 1. Parallel compression

1 > Adding a mix blend control to a compressor plugin provides a quick and easy way to use parallel compression. Many compressor plugins have this, so seek out one that's suitably equipped. You'll find some examples in the CM Suite. Here, we're using EaReckon's CH-COMP87.

2 > Parallel compression is great for beats and in particular kicks and snares. 808 kicks can be tricky to compress, and doing so can add much needed harmonics but damage the decay. We've loaded up an 808, setting quite aggressive compressor settings. We've then used the Mix to blend in some original kick decay.

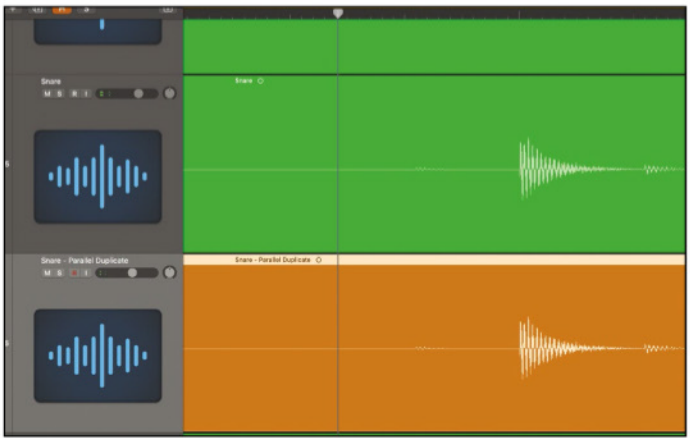
3 > Drum kit kicks can benefit from a similar treatment. We've used the same compressor but adjusted the attack and release accordingly. Listening to the compressed sound with the mix set to 100% wet, we have a very over-compressed sound, but by blending this in (our mix is set to about 35%), we've created a more punchy sound.

4 > We can use the same technique with snares, and it can be a great way to bring up the body and tail of the sound. Here, we're using a slightly different compressor which has a very flexible attack and release, and set it with the attack and release pretty fast but still allowing the transient through.

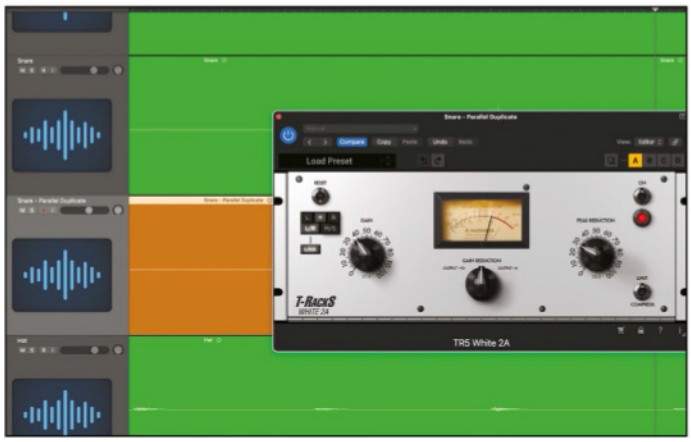
5 > The fast release in particular helps emphasise the tail of the sound. Nevertheless, the compressed sound is pretty unpleasant with a snappy attack, and we wouldn't be able to use this as it is. However, by using the Mix control we can blend this with the original for a fatter sound – our Mix is set to about 55%.

6 > Let's use the same approach for kit overheads. This can help rebalance the direct sound and room elements. We've adjusted the attack and release so they are fast, grabbing but not completely flattening the transients. The compressed signal doesn't sound great on its own, but works well blended in – our mix is about 70%.

> Step by step 1. Parallel compression *(continued)*



7 > Compressor mix blends are convenient but don't work as well if your main track has a chain of inserts. Here, a split parallel works better and there are two main approaches. The first method works for individual sounds and simply involves duplicating your existing track to create a compression-only parallel.



8 > Here, we've got a basic beat with separated kick, snare and hats, and we're going to add parallel compression to just the snare. The first job would be to create a new track and duplicate the snare part over. Then, insert a suitably coloured compressor. Here, we've gone for an opto design.

9 > As before, you can really compress hard – we're metering towards 10dB of gain reduction – and the opto design creates a fat sound without completely killing the transients. We've also added a post-compression EQ to shelve off some of the high frequencies. Then, blend this with the original track and turn both tracks down at once.

10 > The second split parallel technique uses an auxiliary. The best way to set this up is as a pre-fader send, with your compressor on the auxiliary return. This allows you to send multiple tracks to the parallel compressor, although the sends will be post your insert processing, making this slightly different to the track duplicate technique.

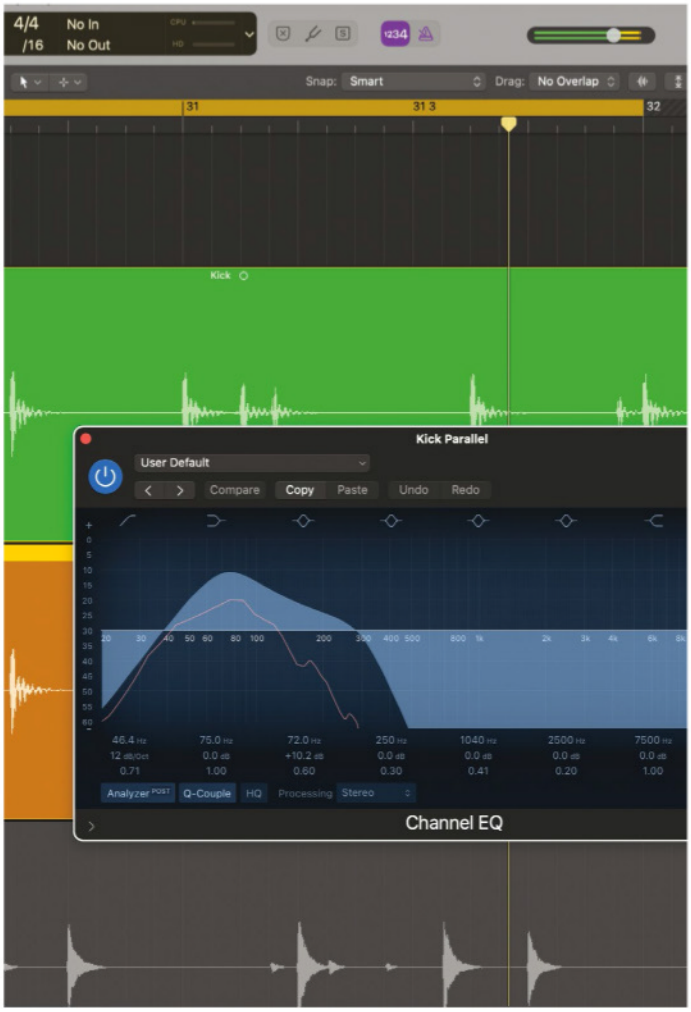
11 > Here, we've set up a parallel auxiliary bus, and this time selected a classic bus-style compressor, using a slow attack (10ms), medium to fast release (200ms), low threshold and 10:1 ratio to achieve plenty of gain reduction. We've also added a post-compressor EQ to help tailor the parallel signal.

12 > The auxiliary technique provides a great way to fatten up your overall mix, and by sending selected tracks to this slammed compressor, we can create flavour that we blend in to taste. It also works well alongside a bus compressor, which can then play a more gentle overall role.

PRO TIPS

PARALLEL PROCESSING

Conventional wisdom suggests that we often set up our parallel compression at an early stage in the mix, designing an extreme compression split, sometimes with additional EQ, and then blend that in with our existing track, submix or full mix. However, this planned approach doesn't always play out. Indeed, we find that during a mix, the processing of individual sounds progresses over time. If these tracks already have multiple level dependent inserts (such as compressors) and already have established auxiliary effects (such as reverb and delay), we don't want to be messing with them unnecessarily. In these circumstances, a good approach, and one that works well with kicks and snares, is to add back in some uncompressed audio as a parallel process. However, if we try to blend in the full sound this will influence the level too much. The solution is to set up a duplicate track and then EQ this track, filtering off most of the frequencies and leaving the required focus area. We can then blend this back in to regain the missing attack, body or weight without changing the existing compression and effects balance we have.



Adding back some uncompressed audio and blending can re-add body and weight

Elizabeth Fraser, the voice of one of Massive Attack's most iconic songs

Roberto Panucci/Corbis via Getty Images

RECOMMENDED LISTENING

MASSIVE ATTACK
TEARDROP
This Massive Attack classic uses various degrees of audible compression and parallel compression, delicately balancing both approaches.
bit.ly/cm_teardrop

CARDI B
I LIKE IT
The powerful but controlled 808 and punchy vocals in this mix have all the hallmarks of parallel compression
bit.ly/cm_ilikeit

BEATIE WOLFE

Innovative artist, composer and 'musical weirdo and visionary' (as described by *Vice*), Beatie Wolfe has trodden an entirely singular path; from her captivating catalogue of songs, to the multidisciplinary artistic projects that interrogate the human response to music, to posing challenging questions about the existential threat of climate change. We spoke to Beatie at the tail-end of her recent *imPRINTING* installation at London's Somerset House, to find out more about her latest ventures and the centrality of music to her art and life

> Beatie Wolfe has long-defied simple categorisation. Originally hailing from South London, but now based in Los Angeles, Beatie's formative passion for crafting acoustically-oriented songs would lead her on a journey far beyond that which many songwriters undertake. As a globally renowned artist and public thinker, Beatie has conceived numerous groundbreaking musically focused (or musically linked) visual and aural art projects. These include creating the world's first 360° AR live-stream from the Bell Labs' anechoic chamber, beaming her music into space in association with NASA and, perhaps most critically, crafting *From Green to Red* – an environmental art piece about humanity's impact on planet Earth, developed from 800,000 years of CO2 data. She's regarded as a passionate musical explorer, delivering lectures and TED talks on its power to heal, transform and define the human condition.

Her 2013 debut album, *8ight*, set the tone for Beatie's career, with the LP's enrapturing set of songs twinned with a unique world-first 3D interactive app. This created an engrossing palm-top 3D theatre experience that enhanced the listening process. This was followed up in 2015's *Montagu Square* with a collaboration with iconic tailor Michael (Mr.) Fish, who created an innovative 'musical jacket', weaving the sound waves of the album's tracks into fabric and thus making the record entirely wearable. Pushing further boundaries, 2017's *Raw Space* utilised the Bell Labs anechoic chamber. Within what is considered 'the quietest place on Earth', Beatie streamed the world's first live 360° AR stream, allowing global viewers a route to experience Beatie live in this astounding environment. The record would later be broadcast into the outer reaches of space; something that very few artists can claim.

Nearly a decade ago, Beatie, co-founded the charity Music for Dementia, based on research Beatie herself had done into how music can still

Photo: Manuela Batas

PHONE
PIER
HOME
STOCK GIG
MUSIC

spark a response from those who are suffering from extreme memory loss. In her latest installation, *imPRINTING*, Beatie digs further into the deep subconscious interactions between music and the self. Consisting of eight rotary telephones, playing back audio recorded across decades – and captured on a groundbreaking new storage medium (we'll come to that...), *imPRINTING* features fragments of conversations with luminaries and friends from different fields (including her good pal, Brian Eno), songs both new and old, as well as echoes of Beatie's own childhood via snippets of sound from early birthdays and other long-forgotten memories.

Meeting Beatie outside the exhibition, we had countless questions, but we began by asking what motivated her to develop this new installation. "I had been thinking about a version of this idea for quite a long time. Probably about four years," explains Beatie. "I tend to have an idea and it happens very quickly. So, this one was peculiar as originally it started out as something quite different. It started out as a way of taking people inside a radio, which was supposed to be exhibited at the Art Institute of Chicago in 2020, then Covid happened and so it didn't happen. I thought that maybe it was meant to be something else."

Beatie elaborates that though she'd been working on quite divergent projects to do with more global issues, she was hungry to return to a project that fit into the music tech space. "I realised that I'd never done something that was focused entirely on audio; I'd done these other areas of exploration from ecology to philosophy and science, and thought what if one could be both artist and engineer, that there are numerous other avenues we can explore if we don't have the blinkers on. In this vein, I thought it would be cool to take people inside the artist's brain and show people how multi-stream and multi-channel it is. It would be a 'sonic self-portrait' in a way, but also would tap into something that was quite collective. I wanted to show that multi-dimensionality that we're often not really allowed to explore."

> "We've become less intentional making music, we can get instant feedback"

Sonic imprints

The project certainly shares a spiritual throughline with Beatie's *Music for Dementia* work, yet could be relevant to all of us – just how does music work? And what does it *do* inside all of our brains to evoke the feelings and sensations that it does? "What are the things that have gone in deep? What music and sounds have stayed with you and become embedded?" Beatie asks. "What are the sonic imprints within your brain? There's a real honesty about those imprints. It's stuff that might not be particularly 'cool'. In your memory, there's not a perfectly curated version of yourself, it's all the big and little things that have shaped you and made you who you are. That aural history lives in your head."

We wonder how the process of curating the audio was undertaken, and how much of a challenge it was to assemble this installation. "I've edited probably around 500 hours of audio in Pro Tools to create the channels," Beatie recalls. "It's something that I find fascinating about sound. It's almost completely imperceivable how much something has been edited or how much work has gone into creating something. When you're looking at a film you can see every time there's an edit or a cut, you can see the effects that are being used. With audio you really can't. There was a lot of processing, and a lot of recording. The *Inner Self* channel is all diary entries, taken from journals I wrote when I was 11-19, with my voice recorded recently. The memory channel is made up of early home movies which I was pulling the audio from."

A further groundbreaking aspect of the installation is the innovative Project Silica storage format which contains all of the audio files used. Resembling a small square of glass, the Microsoft-pioneered format is both ecologically-friendly and really quite mind-blowing. "It's called Project Silica and it's a new way of writing data into pieces of glass," Beatie explains. "One single glass platter holds a terabyte of data, so it's a huge amount of data that's stored in a very small piece of glass. It's written using ultra-fast lasers and retrieved using AI and microscopes. The data is stored as cold, inert data and does not use any energy until you need to retrieve it."

For the *imPRINTING* exhibition, these glass platters are housed within a retro-futuristic 'Thinking Cap' (tailored once again by Mr. Fish), proudly sitting on display at the centre of the installation, with wires feeding out to each of the phones. It makes for a compelling retro-futuristic spectacle, and a slick demonstration of the versatility of this storage format.

Picking up transmissions

With so many major projects, installations and exhibitions under her belt, we wonder if now – as an established force in the intersection of art and music – Beatie still finds time to write music removed from any wider conceptual framework. "Yeah I do, I've always felt that there's a kind of tap that I could turn on whenever I wanted. I remember hearing from producers about artists they were working with who were terrified that they had no more songs or ideas left. I could not relate to that, I've always felt like the songs are there if I need them. With all of the work, as different as it may be, it feels like it happens in the same way. It doesn't feel like I'm sitting there trying to write or create something, it feels more like I'm an antenna that is receiving transmissions from somewhere else, ideas that are meant to exist. So in a way, I feel like I'm the custodian of the projects. There's something wonderful about that, as you don't really feel like it's you."

Typically writing in her LA-based home studio, songs such as the scintillating *Little Moth* and the cinematic *How Can I*, would often arrive fully formed: "The whole song would come together – lyrics, melody, guitar or piano part – I'd record using whatever device I had available to me with a feeling that something was happening. Then a whole song would come

Project Silica: "One single glass platter holds a terabyte of data"

Photo: Ross Harris

Photo: Ross Harris

out. After I would transcribe it from listening to the recording. It's a magical process, because you see it as a film almost, like it's already there, and you're just bringing it into being."

From a songwriting perspective, the 'tuning-in' approach is something that Beatie strongly advocates: "One thing I've been doing more recently, that I really recommend, is to record/produce as you write. For me, it's been a wonderful new way of songwriting. In the past I would write a song and there'd then be a process of rehearsing it before going into the studio to record it 'properly'. Within that time you'd likely change and analyse elements and by the time you'd got to the studio you might have lost something in the process. The number of songs I've recorded recently, as they were coming in, without analysing them and allowing that process of experimentation to show me new things. It's almost like through the recording (and production) process you're revealing a song that might not have been otherwise and capturing that raw spontaneity in the moment, before you start overthinking it."

While Wolfe's concerns are obviously fixed on much wider topics (particularly the issues surrounding climate change, an area in which she's increasingly becoming a prominent voice) we naturally felt obliged to ask her about her preferred production choices. "In the past," she says, "I'd always co-produce. But with that sometimes your sensibility or instincts would clash, they'd want to clean things up, make it more polished. So recording these recent songs myself, in my studio, was a return to embracing the raw and experimental again, being free to follow what I liked and wanted to explore. And there's a fascinating paradox that when you don't know exactly what you're doing, you often come out with really good stuff. Being in that space where you're out of your comfort zone, when you're out in the ocean and you can no longer touch the bottom, that's where the best stuff happens. Because often when we start knowing more we can create blueprints that limit creativity. And really art is about surrendering."

Beatie explains that each of her songs started with a completely fresh approach, with no preset framework for working: "I'd approach them completely fresh, whether that was instruments used or settings or plugins in the chain, each song would need something different. It was a good mode for the music, but I think it's just a good mode in life. It's like with all of my projects, every one of them is entirely different, there is no blueprint. So it really is like starting fresh every time."

The three pillars

In a recent TEDMED talk, Beatie explained how she perceived the music listening experience as being made up of three core elements: storytelling, tangibility and ceremony. We wonder how fundamental these three concepts are to her, and what her thoughts are on the current state of play in the music world of 2023? "They are really central. Of course one changes, and the work changes, but then also nothing changes in terms of the ethos and the philosophy. They are my pillars – ceremony, tangibility and storytelling. They started out as reference points. I didn't think they would stay so relevant. But I kept returning to those three components because that's what we had in the physical era, not just with music but with any medium that has now been digitalised."

It's clear that Beatie sees the decline of physical music listening formats as part of the reason why, for many, music has lost its potency. "We once had an art form, or physical form, that had the ceremony and ritual of setting it up, then we had the story aspect that it was able to tell, and by having those elements it made us present. That presence allowed the music to go in deep and become part of who we are. Because we are so saturated now, there are very few chances for those three elements to come into play. I love the idea that you can create something that harnesses some of the most exciting new technologies that can actually help us as human beings, but it seems a lot of technology is working as a narcissism amplifier. To use technology where technology is really supporting us being on the planet at this time in a way that is minimising our impact, that's what I get excited about."

While the ceremony and ritual of the music listening process may be absent in today's quick-paced, streaming-dominated landscape, we wonder how Beatie feels about the current state of the music production process?

"Before I had a mobile phone, the way I wrote songs was disconnected from thinking about any kind of reaction"

Photo: Mario De Lopez

Beatie's *imPRINTING* installation at London's Somerset House

Photo: Stu Nicholls

Photo: Stu Nicholls

Photo: Hideko San

"I do feel that it's similar. To have the means to iron out all the imperfections and quantise and tune everything; that is a problem because it's really the imperfections that actually move us. It's the things we wouldn't program that make us connect with something. It's Leonard Cohen's weird voice, or Nina Simone's timing and erratic outbursts. It's that *humanity* that we respond to, not the perfect sheen. So, I think what's happened is that we've become less intentional in the creation process. We know we can get instant feedback and gratification and, in theory, make 'perfect music'."

"I remember when I was younger, before I had a mobile phone, the way I wrote songs was disconnected from thinking about any kind of response or reaction. I was so in that moment, disconnected from the feedback loop. You created with a different kind of energy and intent," Beatie recalls, "because we can now make tracks and can release them so instantly, we can get validation and that has become something of a trap. We're almost thinking about it while we write and mix."

While Beatie's points are entirely valid, and we largely agree, we're keen, of course, to accentuate the positives of digital music creation. "Obviously, the positives are there," she says. "It's great that there is more freedom and more access for people. In *imPRINTING*, there's a channel of unreleased music that I wrote during lockdown. It was wonderfully freeing because I could do it all myself and working in this way opened up more avenues of creativity. But I think that just like not all innovation or 'progress' is good, there's as much we need to reclaim as we need to update.

Healing power

Beatie's views on the streaming paradigm shifting our collective perception of music is that it's something currently eroding the power of music. The lack of payment for artists and performers, too, is a further contributing factor to music losing its potency. "I think music is heavily commodified now. It started around 12 to 15 years ago and it's been such a downhill spiral since then. In terms of the industry, I have nothing positive to say about it. Major labels and streaming sites are getting rich, pushing jingles to a point where it's so extreme. Because

"Music is something we still know so little about in terms of what it's able to do to us..."

Photo: Mario De Lopez

you've got 0.01% of the industry making the vast majority of the money and also controlling the way these mechanisms work, controlling what's popular, and how it's popular. I think that level of payola is on a whole other scale than it used to be in the radio age. Of course you've always had certain players manipulating the industry, but the problem occurs when artists feel like they have to create to satisfy a platform. It completely changes the nature and intention of creation."

It's an anger that is borne out of a demonstrable understanding of music's magical ability to heal: "When you've seen what music can do to bring someone who's catatonic into a dancing state or move someone who's non-verbal into singing along with songs they've not even heard, such incredible reactions to music [exist on] a profound level. It goes far beyond entertainment. It's the one thing that can bring us back from these otherwise inextricable binds. You really appreciate music and art on a whole new level which is really deeply tied with our humanity. So to see it become so disrespected and stripped of what makes it magic to begin with, that's what I have a problem with. It stops being music and becomes just another commodity. Music is something we still know so little about in terms of what it's able to do to us, and how it works neurologically. We are only at the tip of a melting iceberg when it comes to understanding its incredible and immeasurable power."

We ask Beatie what has been the highlight of her multifaceted career? "It's a hard one. It's not even that I'm forward-looking, I'm just present-focused," Beatie says, "I tend to have amnesia in that I don't have an ability to attach myself to any project. It's almost like once a project or idea is out in the world it's off doing its thing. If people enjoy it and it's activating something, then I'm obviously happy. Often I can forget projects that have happened as I'm really focused on the here and the now."

To find out more about Beatie Wolfe's upcoming projects and releases, head to www.beatiewolfe.com

HEAR MORE

Beatie Wolfe, *Gimme Some Love*
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Beatie Wolfe, *The Man Who (AR Video)*
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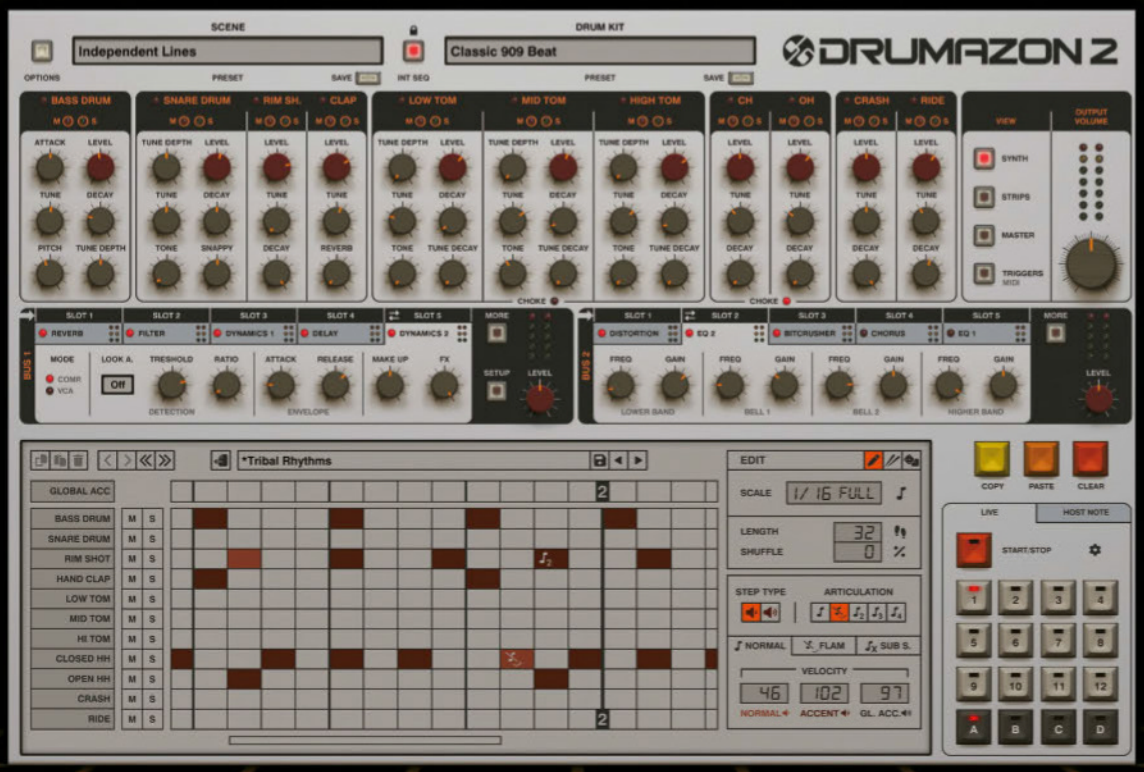

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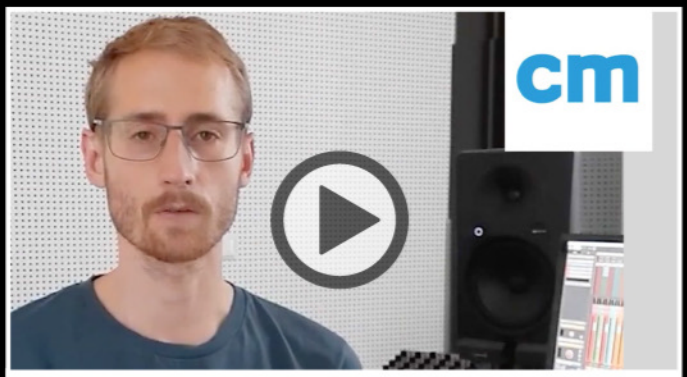

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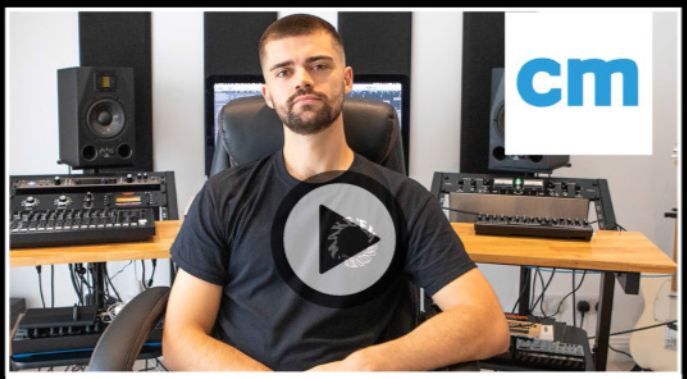

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The latest computer music gear tested and rated!

66__WAVES STUDIOVERSE

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7___Solid. Well worth considering

8___Very good. A well-conceived and executed product

9___Excellent. First-rate and among the best you can buy

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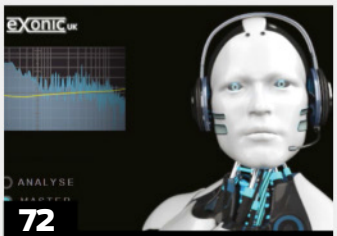

72 Exonic UK
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74 Zynaptiq
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76 Universal Audio
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78 Mini Reviews

Awarded to products that challenge existing ideas and do something entirely new

A product has to really impress us with its functionality and features to win this one

If the product exceeds expectations for its price, it will receive this gong

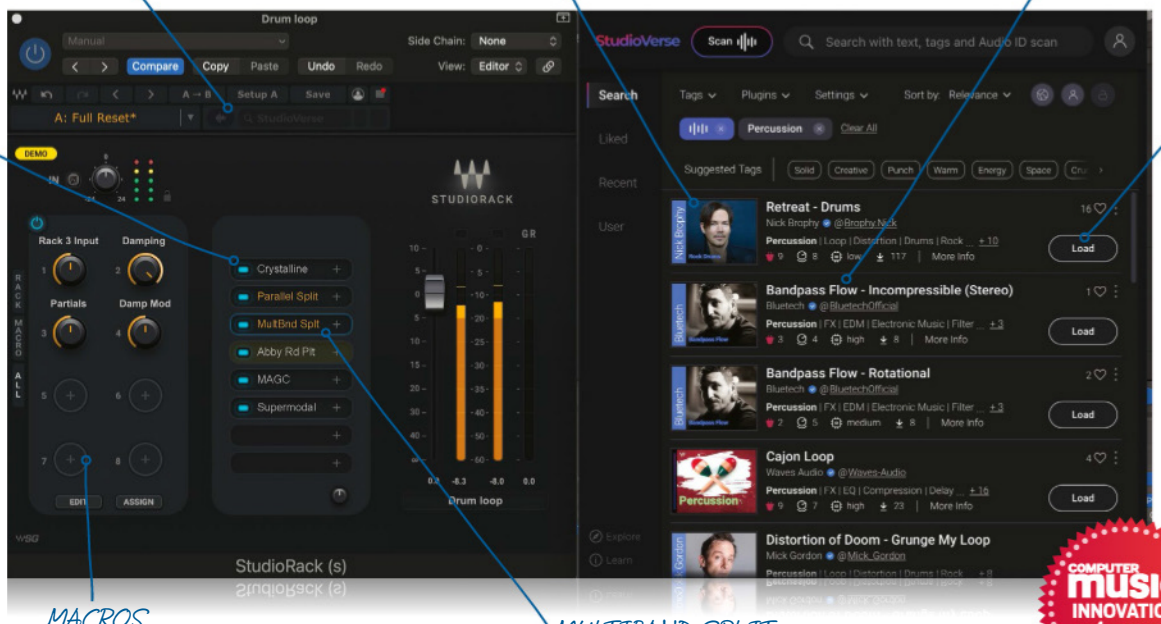
In the opinion of the Editor, the best product reviewed in the magazine this month

CLICK HERE
Analyses audio when you click here (or search with tags) and then suggests effects chains to audition

SUGGESTED EFFECTS CHAINS
Here are the chains that StudioVerse comes up with after analysing your audio

PRO ENGINEERS
Most chains were created by big names, but developers hope the pool will expand

FORMATS
This rack has both VST3 and Waves plugins as it's just a StudioRack setup, not StudioVerse (Waves only)



LOAD IN TO HEAR ... how it affects your audio. This means loading in the (Waves) plugins into StudioRack, but it's easy

MACROS
Up to eight dials can be assigned to parameters in your selected plugins

MULTIBAND SPLIT
Lets you split your frequency range in up to five bands; each can have eight effects racks

COMPUTER MUSIC INNOVATION Award

Waves StudioVerse

£Free PC MAC

Download mix-ready effects chains made by the stars for free and grab yourself a great plugin while you're at it. Surely there's a catch...?

> Waves StudioVerse could be a whole new way of getting pro effects chains in your mixes. Rather than laboriously create your own vocal chain, for example, why not just download one created by Young Guru? And while you're at it, you get to use one of the best free plugins out there: StudioRack. This not only allows you to create your own effects chains with up to eight slots, it also lets you create multiple bands of these eight slots. This means you can take a single band effect and turn it into a multiband one with ease. Just using StudioRack on its own without StudioVerse opens up endless mix possibilities, from 'standard' chain creation to way more multiband madness if you so wish. There are even preset effects chains for different instruments or created by the likes of Lu Diaz, Yoad Nevo and Devin Townsend. The best part is that StudioRack is available from Waves for zero cash whether you decide to explore the wider StudioVerse or not.

Too good to be true?

The latest version of StudioRack contains StudioVerse and this is where the whole 'rack' concept expands massively. The plugin uses AI – hey, what doesn't these days – to analyse your music and then search through a large online community of StudioRack effect chain presets. Then, it suggests a list for you to audition.

In practice you do this by simply clicking the StudioVerse logo (see the screengrab above) and then playing audio through StudioRack or searching by instrument type. The plugin takes a few seconds to download appropriate effects chains for whatever audio you played. The theory is that these will make your audio sound better and we found that generally this did work. It can be a dramatic effect, or a subtle raising in

In our experience the whole process was very quick and gave great, relevant and appropriate results

perception, but the suggested effects chain were relevant and appropriate. And so far, remember, we haven't spent any cash.

But here, finally, is the catch: the suggested effects chains consist of Waves-only plugins, so if you're a Waves newbie, you won't hear any difference in your audio. If you only own a smattering of Waves plugins, those you own will be audible, the rest muted. Of course, Waves make it easy to buy any plugins you don't own.

In our tests, we found the whole process to be very quick – although this obviously depends on your internet connection – and it gave us some great results. We tried it both with a full armoury of Waves plugins and just a smattering; just for a more real world experience for our readers. Obviously the former gives you a seamless and quite brilliant experience, but even the latter was interesting. We found that just seeing the plugin chains was educational and also hearing how important individual plugins can impact a sound was enlightening.

Ready to launch?

If you are a Waves user, especially a *big* Waves user, then we'd say StudioVerse is essential. The process of downloading and auditioning another producer's tools, setting and methods is a vastly revealing process. And remember you won't spend any cash on it.

So is it *just* for Waves users? Mostly yes, but even non or occasional Waves users can enjoy StudioVerse. Firstly you can set it so it only suggests effects chains with the Waves plugins you own. If you don't own many, you won't get many results though. But perhaps the best way to enjoy StudioVerse is to download the Waves 7-day demo of Waves Creative Access which gives you access to all of the arsenal. After seven days, the plugins will still work but you will get audio dropouts every few seconds.

StudioVerse is a fantastic experience – and a frustrating one in that we can see how good this could be if it included *all* plugins. But for the present moment in time, it's Waves only, although we see no reason why Waves couldn't open it up to other developers to make it a more universal system. And what a future that could be. **cm**

Web www.waves.com

The offline presets in StudioRack come with the free plugin but just like the online ones, only use Waves plugins

With eight macros, eight effects per chain, Parallel Split and Multiband Split, it doesn't get much more feature packed per-dollar than StudioRack. Especially when that dollar is actually zero dollars

StudioRack in more detail

StudioRack has been around for a while but deserves special mention as it is a great plugin... and free! It's essentially an effects chainer with which you can chain up to eight together via drop-down slots. The best part is that – unlike the StudioVerse online and offline presets – these aren't limited to Waves plugins. There's an extra folder for VST3 plugins and once you have scanned for them (on first installing StudioRack) these will appear and be available to use in any of the slots. So if nothing else, StudioRack could be the VST3 wrapper you need. It gets even better though. The Multiband Split option lets you place eight effects in five different frequency bands and Parallel Split gives you just as much flexibility across your stereo spread. Then there are eight macros that you assign to parameters within your plugins and then automate those. That's everything you need to turn a basic effects chain plugin into a bonkers multi-effect. All for free!

Alternatively

Splice
£from free
There's nothing out there like StudioVerse, but Splice has a good community feel and lots of advice

BandLab
£from free
Again, nothing like StudioVerse but has a big online community and a free browser DAW

Verdict

For Slick experience and free plugin!
Fantastic to use other people's FX chains
A must-have for Waves users
StudioRack is a must-have for all users

Against Best for Waves users
...And those with lots of existing plugins

It's Waves-only at the moment but should StudioVerse become more of a *UNI*verse this could be a mixing future for all of us. A hugely innovative idea.

8/10

Arturia

PC MAC

FX Collection 4 €499

Yet another (huge) bundle of plugins from Arturia, but does this latest update do the same for effects as V Collection does for instruments?

> Arturia might be famous for hardware synths like MatrixBrute and PolyBrute, or the vast suite of software instruments that is V Collection – surely everything you could wish for when it comes to vintage keyboard emulations. But what the company is perhaps less well known for is their software effects. They did make headlines releasing bundles of them called (and you either love or hate the name) '3 Effects You Will Actually Use', but those fab threesomes seem to have fallen by the wayside in favour of the FX Collection bundle; the latest here being v4. And while it might not be stealing as many headlines, it deserves the plaudits that the Brutes and V Collection get. Like them, it's huge.

Everything effects

Yes, it's 'huge' as in V Collection 'huge', because FX Collection has every effect that Arturia has ever done – 30 of them – including all of those '3 Effects...' collections and a whole lot more. Savings, as with V Collection, are pretty big too. The price tag of €499 might look steep, but buy them individually and you're looking at €2,970.

When you dig into the collection you get five each of compressors and spatial (reverb) effects; four filters; three each of delays, distortions and preamps; two turtle doves (sorry); and the remainder being made up of modulation and filter effect plus the odd EQ.

The highlights of the collection thus far have most definitely been – again, see V Collection – emulations of absolute studio classics. Who doesn't want a Roland Space Echo delay, Urei 1176 compressor, and EMT 140 plate reverb in their plugin arsenal? But we also like it when Arturia dig deep into a more modular world, allowing us to use the filter from a Moog or Oberheim synth with Filter MINI and SEM,

Filter MS-20 is probably the filter you don't want your mum to meet but one you always want to use

or the famous Juno chorus effect (Chorus JUN-6). These are neat and specific additions that have rarely been emulated by other companies, well, not as much as the synths in V Collection anyway. And we'll make our last V Collection reference now (promise) as that title's latest update has had to focus a little more on newer plugins. There are simply fewer classic synths to emulate – and we're seeing that trend continue with the latest FX Collection. A little, anyway.

We're used to Arturia adding around four plugins to each of their bundle updates and here we get three emulations and one newbie which we'll start with. Dist Coldfire is a very flexible distortion plugin that features distortion, delays, modulation... actually a vast range of effects, from subtle to crazy. It has a great interface that jigs in time with the effects and makes you feel a little drunk. Coldfire is, frankly, superb.

To the classics and Rotary CLS-222 is a Leslie speaker simulator, the kind of modulation made famous with an organ but now used to grunge up any sound. It's a plugin with a surprising flexibility even over its few presets. LX24 is a wonderfully easy (but probably very complex) recreation of a Lexicon reverb and again there's more than you'd expect sonically here, with everything from slightly airy to mountainous and huge – but mostly we want to use the word 'lush'. Filter MS-20 is the abrasive filter you don't want your mum to meet but one you always want to use. Again a good number of varied sounds but you'll be reaching for the distortion control more than you should.

One for your collection?

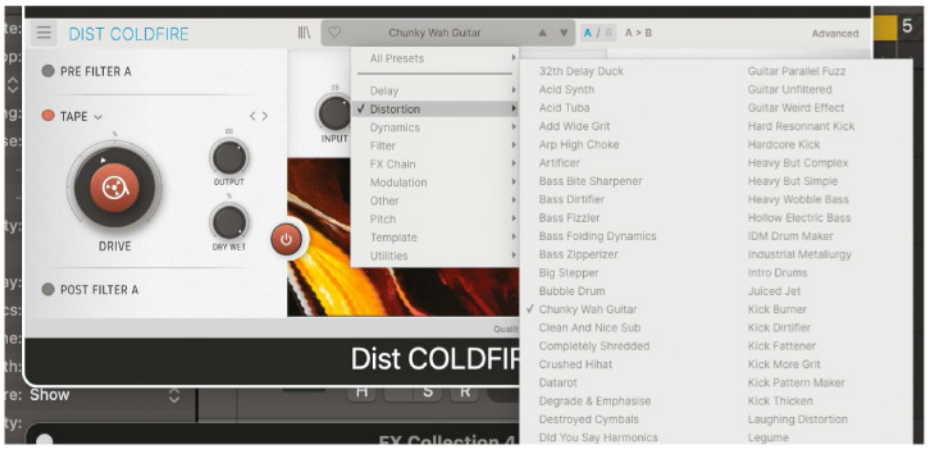
You can tell we have a lot of time for – and will spend a lot more time with – FX Collection 4. But it will be the more focussed plugins where we (and probably you) might get the extra benefit. These very specific titles can give you a creative edge that your DAW plugins might not offer. While not a massive hike from v3 – but the update price from v3 to this latest one is not exactly massive (see above) – this is a hugely detailed and creative beast of a bundle. You'll worry about plugin bloat. And then install them all anyway. **cm**

Web www.arturia.com

There are more than these four new plugins in FX Collection 4 (including resizing which was necessary on our tiny MacBook) but they're the highlights of a great bundle that it's worth upgrading

Is it worth upgrading?

So far it's very much a case of 'buy the bundle, save the cash' – and if you do the maths it only works out at €17 a plugin, which is great news for newcomers to the Arturia effects world. But what about upgrading from previous versions? Well, FX Collection 4 actually delivers quite a bit more over its previous incarnation too. Firstly there are several updates for other plugins. EFX Fragments is another one of the non emulation plugins and this granular processor gets a modulation workflow overhaul, while other plugins get added presets. That said, previous FX Collection owners get some of these for free anyway. All effects can now be resized on screen – although we didn't manage that with some – and all the plugins now support Apple's latest chips and Native Instruments' NKS. Upgrade pricing from previous version is a little vague but seems to be between around €29 from FX Collection 3 to €99 from previous versions. Either way, it's worth doing.



Dist Coldfire is a superb addition to FX Collection 4 (just look at all those presets) and it has a hugely varied sound

Alternatively

Soundtoys 5
$499
We love Soundtoys plugins more than life. Here are 22 for less than 500 bucks. Need we say more?

FabFilter Total Bundle
£769
More expensive and only 14 plugins but, hey, it's FabFilter, so it's fab

Verdict

For A superb collection, simple as that
Dist Coldfire is amazing
€17 a plugin!
Gives you some lush Lexicon

Against Not a huge update
Plugin bloat!

A massive set of creative effects, classic mix plugins and essential production tools that deserves as much praise as the Arturia big guns. But do you really need another 30 plugins? Of course you do

10/10

ZOOM LEVEL
Choose a visible gain range or automatic mode for viewing the EQ curve

CURVE DISPLAY RACK
Use this visual option for easy adjustment of all bands

SPECTRUM DISPLAY
View the real-time spectrum analysis curve and shaded cumulative curve

PANELS
Select from the control rack, curve display rack or both together

CONTROL RACK
Traditional band controls are joined by extra features in the centre section

CHANNEL LISTEN
Use the headphone buttons to monitor one channel on its own

CHANNEL MODE
Select either L/R or mid/sides processing

AUTO-GAIN
Automatic compensatory output gain based on the EQ gain settings

DE-ESSER
Choose between band-pass and high-pass modes for the onboard de-esser

COMPUTER MUSIC PERFORMANCE Award

Pulsar Digital
Pulsar 8200 €149

PC MAC

Classic EQ plugin emulations are plentiful, but this particular design is not so commonplace. Has this ambitious developer hit the mark?

> Developer Pulsar Digital seems to be on a bit of a mission to revisit classic hardware and give it a modern software twist. They've already had a good crack at a couple of Urei compressors (1178 and 1176) and on the EQ front their first target was Manley's Massive Passive. Now they've turned their attention to the George Massenburg GML 8200 EQ. This highly regarded and sonically transparent hardware unit offers a beguiling blend of parametric precision and smooth sheen that explains why good condition units still fetch in the thousands. Of course with plugins, achieving transparency is less of an issue. Nevertheless, emulating those classic GML curve shapes is clearly important, as is the parallel band topology, and these are both starting points for the plugin.

Pulsar 8200 features the familiar GML 5-band design, with flexible overlapping frequency ranges, +/- 15dB gain, and extended overall frequency range (15Hz to 26kHz). The 8200 also matches the hardware's knob colours and adjustable Q, with the additional shelving option on the high and low bands, although those width controls now get dedicated knobs. In use, this delivers the expected curve shapes and importantly gain behaviours associated with the original parallel-band circuit design. This means that although you can apply quite precise EQ, you won't find the ear-splitting capabilities of a

Pulsar has gone to town on software enhancements. There's so much to talk about, where do we start?

modern digital serial EQ plugin. This makes the 8200 easy to use and if they'd left it at that, the plugin would be a decent straight-up hardware emulation. However, Pulsar has really gone to town on the software enhancements, and there's so much to talk about, it's tricky knowing where to start...

Finger on the Pulsar?

Much like a couple of their other plugins, the interface has two panels, one with the analogue-style layout (the control rack) and one with a fully editable graphic display and analyser (the curve display rack). You can view and use each independently or both of them together, and the overall window is freely resizable. The control rack has a centre section flanked by the main EQ controls and the five core GML-style bands are joined by five further controls: Tilt, Air, Sub and two filters (HP and LP). That makes 10 bands in total, all with handy individual on/off controls. The Air and Sub controls are fixed frequency, boost-only curves that combine a smooth lift with a modest dip around the filter frequency. We found these great for basic mix bus-sweetening, offering an alternative style to the main shelves, which are often used for this task. Tilt meanwhile adds the classic high/low pivoting control and is great for subtle modification of your overall curve. Rounding things off, the high and low-pass filters include an impressive choice of adjustable slopes (eight options from 6dB to 48dB/octave). All EQ band controls are replicated within the curve display rack, where you also get a background spectrum analyser with real time and cumulative options.

The control rack centre section primarily handles channel mode and levels, but also includes a de-esser with band-pass and high-pass filter modes. The channel modes are Mid/Side and Left/Right with a handy channel specific solo. Meanwhile, input and output gains (+/-15dB) are joined by an output Auto Gain option, and we found this did a good job of keeping overall perceived loudness similar after EQing. On the topic of gain, there's also an overall Gain Scale (0 to 100%), another sensible and usable feature that allows you to trim the overall gain. We thought an overall scaling boost would also be useful.

All told, Pulsar's 8200 is a fantastic EQ with a flexible interface that accommodates different working styles. But what sets it apart from a multitude of other very capable EQs is the ease with which you can conjure up those classic GML settings. **cm**

Web www.pulsar.audio

All the EQ settings can also be accessed from the curve display

Pulsar 8200 is packed with great features including stepped gain, frequency and Q width options

Hidden extras

Pulsar's 8200 has some great features that aren't immediately obvious. First up, the display rack has not only an adjustable visible gain range (+/-3dB to +/-36dB), but also an automatic setting that switches the display gain range between +/-12dB and +/-24dB, depending on how much gain has been used. Handy.

Next up, by default all the control rack controls have continuously smooth behaviour with CTRL + mouse adding even more precise control. However, in the spirit of GML's 9500 EQ, which is a mastering version of the GML 8200, the plugin's main controls can operate in a stepped manner. This is highly flexible with gain, width and frequency all individually assignable to this mode. What's more, gain options include 0.5dB, 1dB and 3dB steps, and we also found you can continue using the CTRL + mouse option to override any control. Fantastic stuff.

Finally, the 8200 includes oversampling (off, x2, x4 and x8) and in the spirit of flexibility there are completely separate settings for real time use and offline bouncing, letting you streamline CPU usage to taste.

Alternatively

Eiosis Air EQ
$69
Slate Digital's innovative EQ not only has loads of great features but is also great value

IK Multimedia Master EQ 432
€125
If you've been specifically looking for a mastering-style EQ, this Sontec-inspired design is an excellent choice

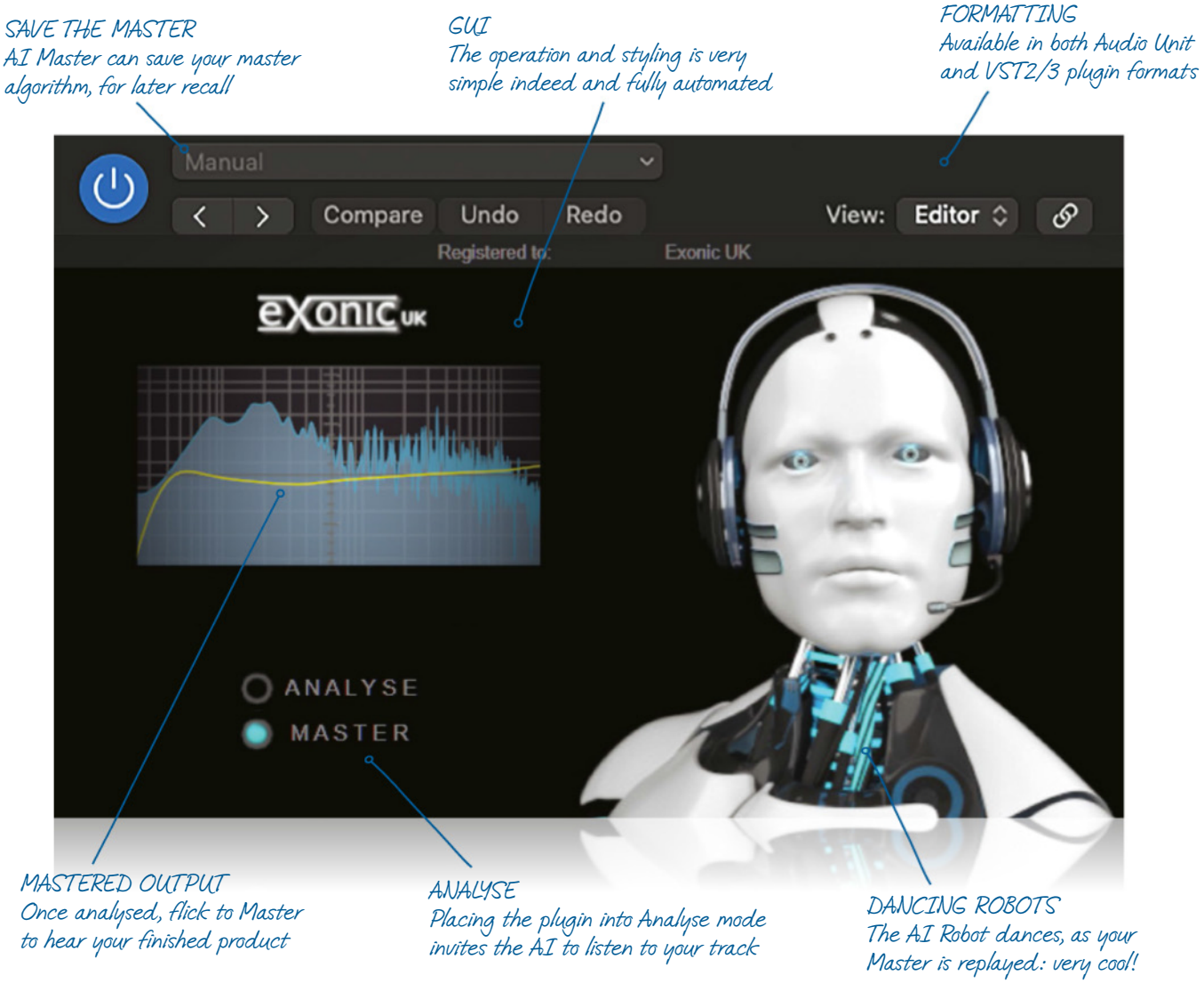
Verdict

For
- Parallel band topology and curve shapes emulate original hardware
- Graphic mode provides a quick alternative interface
- Excellent choice of software extras

Against
- Pricey

Pulsar 8200 brings this classic EQ right up to date, supersizing it with a host of fantastic enhancements and extras

9/10



Exonic UK
AI Master £79

PC MAC

While the world asks if it's time to limit AIs' exposure to humanity, we ask if it's time to expose AI to limiters? It's time to automate (meet) your Master

> Mastering is a process open to aural scrutiny and debate, with one person's perfect mix being another person's over-baked catastrophe! But what if the process could be fully automated? Would we be happy to surrender our ears to the 'bots?

Mastering, but not as we know it

AI Master is a new mastering plugin which hopes to take all of the mystery out of the mastering process. This concept relies upon the surrendering of control to the AI within the plugin, as it calculates everything that you need within the mastering chain. Featured elements for treatment include adjustment to the dynamic range of the track through compression and limiting, spectral balancing, stereo image/soundstage alteration, and probably more besides.

Once these elements have been adapted automatically, the outputted signal provides levels which are ready for use in the real world. Hence, it could be considered an ideal plugin for preparing tracks for commercial consumption.

Given that the entire process is automated, operation is minimal. In the first instance, AI Master will require a signal, with the preference being an unprocessed or unmastered track, with -6dB headroom. There is room for manoeuvre, with listed acceptable input levels ranging from -12dB right up to 0dB, although it stands to reason that in order for basic compression to perform adequately, offering a signal below 0dB is a good idea. According to Exonic UK, offering AI Master anything in excess of 0dB will make it angry, and we didn't feel brave enough to try poking AI with a stick. We'll take their word for it!

The ideal is to place the plugin on your master bus, without additional plugins. You then place AI Master in Analyse mode, which is in essence a listing mode, and play your entire

There is no doubt that there is a future for this technology, but we feel that our mixes deserve a little more control

track. Once complete, your bespoke master algorithm is created, leaving you to place the plugin into Master mode and hear your mix played back in glorious technicolour.

Algorithmic output

So how convincing is the output? The one word answer to that is 'variable'. In our tests, we mastered a number of tracks, which could be considered mixed and ready for mastering, at a level of -6dB.

The tracks that were the most successful, by some margin, were the tracks that adopted a common commercial thread from start to finish. The most obvious result being a relatively heavy increase in volume, with a considerably raised dynamic floor, producing an undeniably commercial and solid overall dynamic output. Where the compression is less obliging is within a track that included dynamic builds and crescendos; a sense of 'pumping' was introduced, presumably through compression, which was not welcome or appropriate.

EQ-wise, the high frequency content glistens, with synths and strings sounding bright and elevated, and a good sense of foundation in the bottom end. This also felt over-inflated in all instances, but dynamically solid nonetheless.

The imaging was more difficult to detect; with such a feeling of sharpness across the mix that it was difficult to decipher whether the soundstage had been broadened, or was just brighter generally. Regardless, the focus is definitely sharpened.

The final master

The biggest caveat throughout our AI Master use, is that the entire process allows no access to any of the individual elements within the mastering chain. It can be exceptionally useful to A/B individual elements, and as there is no capacity to do this, you're forced to either accept the consequences, disable the plugin or add further plugins to adapt the outcome. In every tested instance, we felt that we wanted to make further adjustment to complement our original track.

There is no doubt that there is a future for this technology, but we feel that our mixes deserve a little more control and nuance. That said, we can't wait to hear where this plugin goes, as the technology is clearly impressive! **cm**

Web www.exonicuk.com

While in listening mode, the AI crunches the numbers

TC Electronics Finalizer walked so these robots could run

Know it all

Exonic UK are not the only company to embrace AI for the purposes of mastering. Long before AI was a 'thing', companies such as TC Electronics were using wizards within their Finalizer technology to hold your hand through the mastering phase. So where does AI Master fit into the typical workflow? It's a good question because many professionals will not want to be prescribed a mastering chain that cannot be altered (although there is nothing to prohibit a user from adding further elements, such as EQ or Imaging plugins). But for the home user, working to a modest budget, AI Master will help tighten mixes considerably, controlling elements such as extended bass frequencies, that you may not hear within a home setup. According to the designers, AI Master has been constructed by putting it through its paces with many, many different tracks, but firmly at the more commercial end of production. So if you're producing classical, cinematic or ambient music, don't be surprised if the AI doesn't deliver to your liking.

Alternatively

iZotope Ozone 10 Elements
$129
Ozone is as an industry standard in mastering, available at three price tiers. Elements is the entry level

Musik Hack Master Plan
$75 (annually) or $175 (upfront)
A simple but very adaptable and easy-to-use mastering plugin

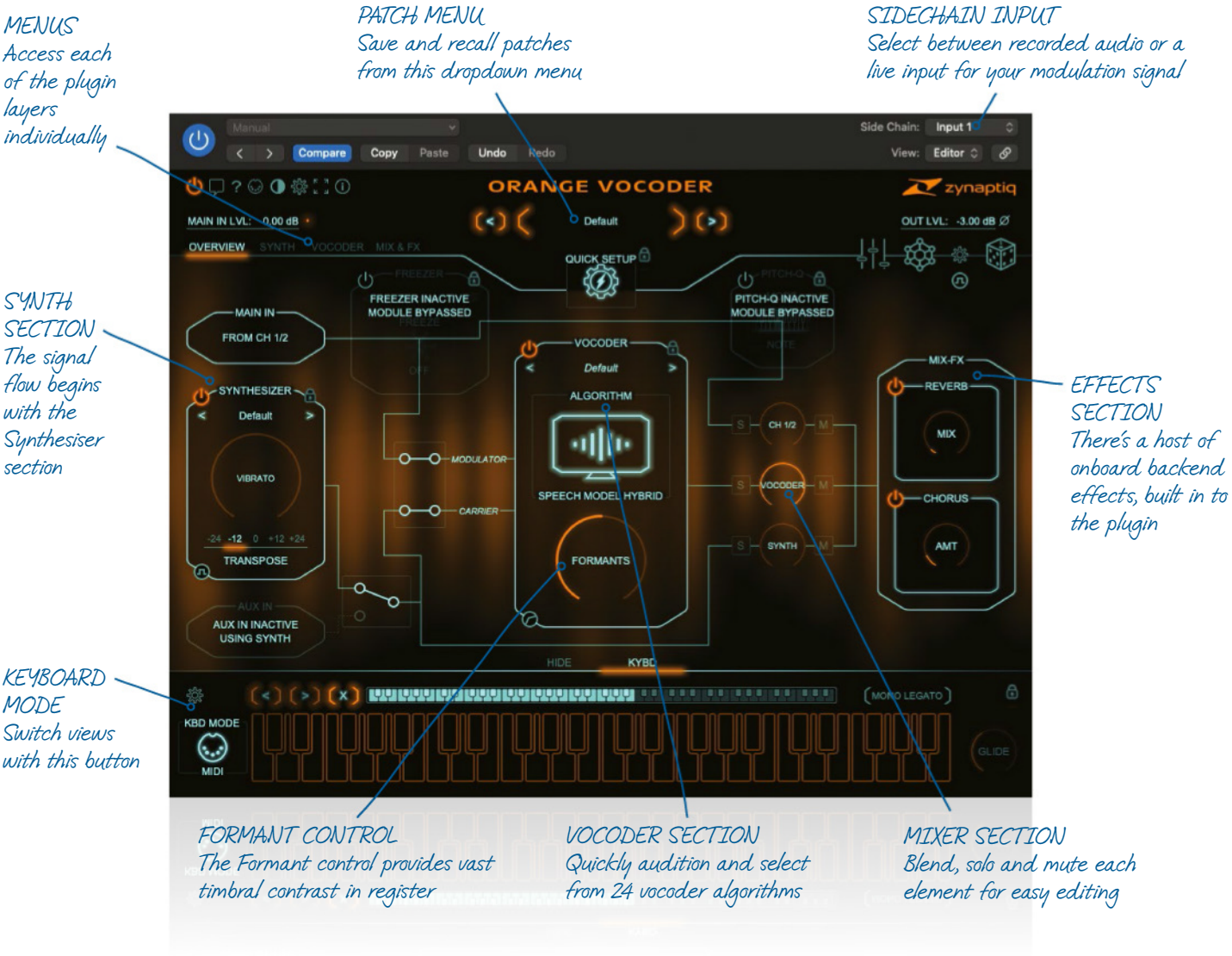
Verdict

For Very impressive AI technology
Creates crisp highs and solid lows
Well founded, outputted signal, for commercially-angled productions

Against No access to the individual mastering components
Lack of mix/blend control
Compression elements can be confused by mixes containing dynamic variance

With no capacity to adapt its parameters, it's a limited but promising start

7/10



Zynaptiq
Orange Vocoder IV

$249 PC MAC

The unique sound of the Vocoder is synonymous with the future, and thanks to Zynaptiq, the future's looking particularly orange...

> There are few sounds that encapsulate electronic music like the sound of the vocoder. That sound of the robots singing: that's a vocoder! The only problem is, they can be a tad tricky to use, but Zynaptiq aims to change all of that, with its long-awaited update to the hailed Orange Vocoder.

Under the Robot's visor!

Orange IV is a fully functional and flexible vocoder, fully integrated into the DAW-based realm. Unlike previous versions, IV loads as a fully-functional MIDI controllable software effect. This is important, due to vocoding architecture; vocoders require two signals, namely a carrier signal, which usually takes the form of a synthesiser, and a modulation signal, which is most commonly a voice, although vocoding drums is also a popular pursuit.

The combination of these two elements is visible from the main overview page, which displays the signal flow, making it easy to find and edit the exact sound you would like. While many other DAW-based vocoders concentrate on emulating the classics (and there's nothing wrong with that), Orange IV provides 24 different vocoder colours, loaded through algorithms. This means that you can sound like Kraftwerk or Earth Wind & Fire from the '70s, or quickly switch to Daft Punk or the contemporary sound of R&B, without any issues.

As we have a powerful synthesiser engine built into the plugin, you can use this as a synth in its own right. Equipped with its own parameter page, the synth section provides all the classic subtractive waveforms, with some hard-edged cutting waveforms too, combed through two oscillators per voice. This is useful for obtaining a sharp contemporary sound,

Sound like Kraftwerk or Earth Wind & Fire, or quickly switch to Daft Punk or contemporary R&B, without issues

although you can mix and match the waveforms using four different low-pass filter designs. It's very admirable as a synth, but it's the combination with the vocoder section where things really come alive.

The new flow

The Overview page offers muting and soloing of each plugin section, in order to establish which signals are in play. The inbuilt synth signal can be replaced by an external synth signal if desired, although we found that due to the way that vocoders colour sound, the onboard synth was by far the easiest option to use, with little benefit to bringing in an external carrier.

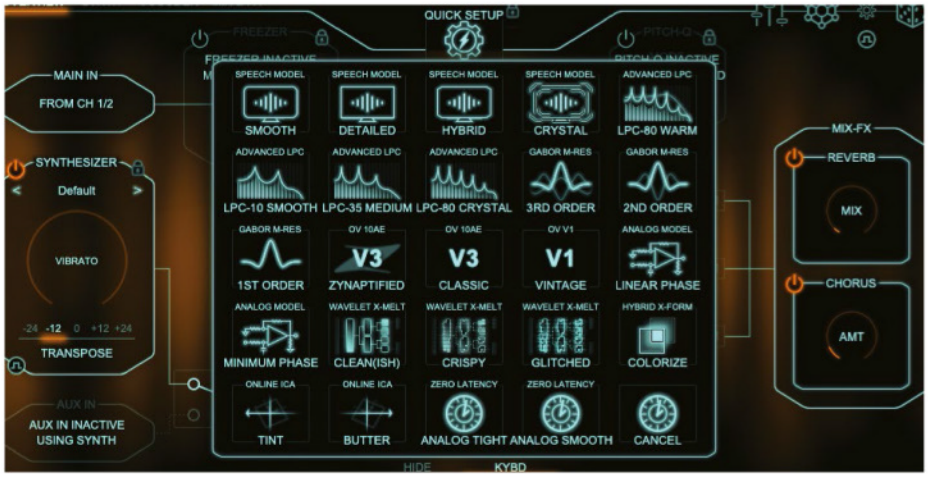
The vocoder algorithms are altered with a click-and-select, with one nice feature allowing your mouse to hover over your intended selection, in the form of an audition mode. We found this to be a little glitchy, if you scuttle through the vocoder algorithms too quickly, but it's very useful for getting an idea of your proposed sound before committing.

The different vocoding algorithms provide a huge cross section of voicing options, from classic to fairly sharp and digital. There are also algorithms that are a little more way-out, with degrees of distortion and bit-crush effect, at source. You can also alter your vocal formants, which adjusts the tone significantly, for the Mickey-Mouse-on-helium effect, or Barry White on steroids!

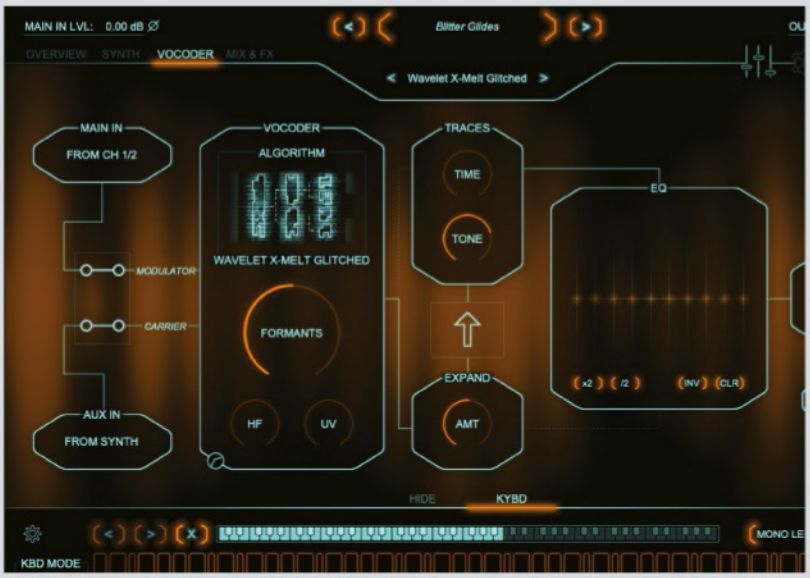
Total control

At the bottom of the plugin, there's a keyboard which can be assigned a fixed set of notes, or used to trigger, from a MIDI keyboard. We did notice a degree of latency, even in our DAW's low-latency mode, which isn't entirely surprising, due to the significant processing required, but it can make playing in real time a challenge, if compared to some other hardware or plugins. However, the effort is notably worth it, as the total package of synth, vocoder and associated effects is one of the most impressive we've ever seen. **cm**

Web www.zynaptiq.com



Populated with 24 vocoding algorithms, you're spoilt for vocoder choice!



Hard-tune

The process of vocoding is a highly recognisable one, but it is also often confused with other similar technologies. Bizarrely, around the same time that the original Orange Vocoder first appeared, so did a little product known as Auto-Tune. It didn't take very long with producers to discover the effect now commonly referred to as hard-tune. This is where you hear a vocal snapping into a diatonic or chromatic scale, as directed by the Auto-Tune itself. This was originally combined with a vocoder on the song *Believe* by Cher, before entering the production psyche and becoming a very commonplace occurrence in many contemporary productions. Orange Vocoder IV also includes a hard-tune option, which means that you don't necessarily have to play the keyboard in order to get that effect. In our tests, we found this pitch detection option to be a little hit-or-miss, but as with all production processes, spending a little time with a product will help you get the best out of its operation, and you can always fall back on the keyboard-playing default, to really hone your hard-tune sound.

Alternatively

iZotope VocalSynth 2
$199
Packed full of different unique and stylised vocal effects, along with tracking and hard-tuning

VirSyn Matrix Vocoder
€199
So good, Kraftwerk use it! Two vocoder models, one based on the legendary Sennheiser VSM 201

Verdict

For Versatile and editable
The onboard synth lends itself brilliantly to the task of Carrier
Signal flow soloing/muting is very useful

Against Significant latency makes real-time playing a challenge
Some glitches when picking algorithms

Vocoders can sound very stylised, but Orange IV covers all the bases that you'll ever likely need, in a neat and stylish plugin

8/10

Universal Audio
Capitol Mastering Compressor

£349 or subscription PC MAC

UA's latest native plugin promises the sound of thousands of hit records, as they model a compressor of which only four were ever built

> Universal Audio's meticulous software emulations of classic gear have recently started going native, so more and more of them no longer require UA gear to run; great news for all of us as we can simply run them in whatever DAW we use, just like any other plugin.

The US company's core range of plugins used to largely focus on classic outboard gear but has now also branched out into instruments like Electra 88 and Moog Minimoog. But with this latest Capitol Mastering Compressor, we're very much back to bespoke outboard gear, this time modelling Capitol Studio's hand-built tube compressor, the CM5511. Only four were built for Capitol's mastering suites but they've been used to master tracks on legendary labels like Capitol, Motown, Geffen and Def Jam.

Thousands of tracks have been mastered with this suite of compressors and the new plugin models two of the original units. It's designed to not only give your tracks that mastered pro sheen but also to add a rich, velvety and smooth sound to instrument groups and even individual tracks. It's the sound of one of the rarest piece of studio gear... made available to the masses.

As ever with the likes of UA and other plugin companies like Waves, take the price as the maximum you'll pay. There are many bundle deals and sales: the compressor is half price as we type this, for example. You can also get it as part of a UAD Spark subscription for $19/month or $149/year which also nets you another 30+ native UA plugins.

Standard controls and more

With standard Input and Output level controls per channel, plus a Threshold dial to set the level at which the compression starts, Ratio (the

The Mid/Side presets deliver tonal and spatial compression we hadn't requested but certainly welcomed

amount of compression) and Attack and Release controls to control the time it takes to kick in and out, we have typical compressor options. But this emulation throws in some extras too.

As well as stereo compression (where the top section compresses the left channel and the bottom the right) there's a mid/side option to process both the middle and side of your stereo image independently. Here, the top controls apply to the middle of the stereo image, and the bottom controls to the sides. There's an internal sidechain which filters out low-end material when detected, and a mono fold feature reduces the width of bass material. Very useful for controlling the impact of such frequencies.

The Headroom, Mix and Saturator controls can be used subtly but are also tempters just to bring in some quick fix colour and level and to increase the impact of your finer tunings. Saturator and Shape are great for introducing some instant impact, for example.

The presets, produced by engineers including Evren Göknar, Rik Simpson and Niko Bolas, are useful tools to get a feel for how the compressor works across a variety of uses. We cover the main mastering ones in the box (right) but stepping through other presets, you quickly find out how the plugin can add presence to individual tracks or instrument groups.

We especially love the more saturated ones for adding colour and sizzle to drums or livening and dirtying up bass, but there are equally useful, more nuanced limiting options. The Mid-Side ones too are exceptional, delivering tonal and spatial compression to parts of our width we hadn't requested but certainly welcomed.

Modern master

With its meticulous recreation of one of what you might call the rarest pieces of studio equipment out there, UA have given us all access to a unique tool that can be used both subtly for mastering or creatively 'per instrument'. It's not the cheapest way into vintage tube mastering, but with those modern enhancements and controls, is one of the most flexible. Certainly with this compressor in your plugin chain you'll need little else for exceptional masters and it comes highly recommended. **cm**

Web www.uaudio.com

As with many UA plugins, clicking the preset opens up a separate tab for making more selections by type

Capitol's Pop preset has medium attack and release times and a low ratio. It's one of several presets in the plugin that are for mastering different musical genres including jazz, R&B and rock

Mastering compression

The Capitol Mastering compressor specialises in mastering complete mixes. A compressor's role here is a fine balance of reducing dynamic range to increase loudness and punch via the make up gain, but also preserving the feel of the original mix. Compressor settings are usually subtle and gentle, used to help 'glue' the mix together. Ratios are most likely to be between 1.2:1 and 2:1 (max); threshold set high to deliver only 2dB of gain reduction (to preserve the original dynamics) with soft-knee settings for less aggression. Start with low attack times (10 to 40ms and experiment up to 100ms); too short and the transients get squashed. Release times should deliver a smooth gain reduction which follows tempo; try a fast 300ms for higher tempo songs and up to 800ms for slower. Capitol's presets follow these rules – to a point – and it has several for different genres, with all low ratios and different attack/release times. Use these as a start point and experiment... subtly!

Alternatively

Arturia 3 Compressors You'll Actually Use
€199
Includes the Gates Sta-Level which the Capitol is based on

Waves Abbey Road TG Mastering
$199
Several modules of equally rare gear emulated by Waves... and a great set of mastering tools

Verdict

For Subtle or colourful, you decide
Fantastic mastering plugin
Can be used more creatively on tracks
Lovely 'modern' additions

Against Not the cheapest compressor

UA's Capitol Mastering compressor is as useful for individual instrument tracks as it is entire mixes, and brings lovely modern touches into a very vintage-sounding and looking aesthetic

8/10

Soundware round-up

Audiotent
Spiral £45

Precisely 107 peerless presets for Reveal Sound's excellent Spire softsynth. And each sound that corkscrews out of your speakers has bags of cutting-edge character.

Choose from heavyweight subs, frosty leads, demonic basses, and endlessly rotating arps and pads. Each impressive noise is beautifully sculpted from within Spire's formidable internal architecture by AT's skilled in-house sound technicians.

Futuristic, analogue-indebted melodies, harmonies, and tones come ready to impress, out-of-the-box. So, put them to good use, without all that bothersome fine-tuning and tweaking beforehand.

Another top-drawer preset pack from the label. With bonus MIDI and WAV files.

www.audiotent.com

9/10

Sample Market

Originals: Christopher Ledger £35

Cool and classy collection from the Italian production maestro. Here, he grabs the artist pack concept with both mitts, delivering a slick selection of signature sounds. There's sweet breakbeats, atmospheric melodies, and pulsing pad work. Plus, other tough drum and riff grooves to add flavour to your tracks.

All loops thunder in at 130bpm, with the best bits key-labeled for quick and easy auditioning, too. A fun library, mixing up everything from electro and ambient, techno and breaks – keeping in step with this eclectic studio whiz's broad sonic spectrum of influences.

samplemarket.co.uk

8/10

W. A. Production

Hardstyle Hysteria $29.90

Relentless barrage of no-nonsense hardstyle hits, loops, MIDI, and presets. All dialled in at 11, and gagging to be added to your next thumping dancefloor smasher. The drums punch hard – each kick crafted to cause maximum damage, with all snares equally holding their own in the fight to be heard.

Bass and melodies drive heart-rates up. And the percussion and hat lines tick and twitch around the grooves, further pushing the energy levels. Zero-bar vibes here. This is peak-time mayhem, or nothing. You have been warned.

www.waproduction.com

8/10

Zenhiser

Starlights £41

Elegant selection of bright and twinkly sounds. Pulling from the dreamy depths of spacey house and techno. Not that this release wants to be put in a box. No pigeon-holing here, thank you very much.

Hopefully, as producers, you all look into other genre packs for inspiration, outside of your chosen style of music making. Good on you. It's in that spirit that these ethereal and enchanting melodies have been made. It's grooves from the outer regions of nuanced electronica. Turn off the sat-nav and aim for the middle...

www.zenhiser.com

9/10

Sample Tools by Cr2

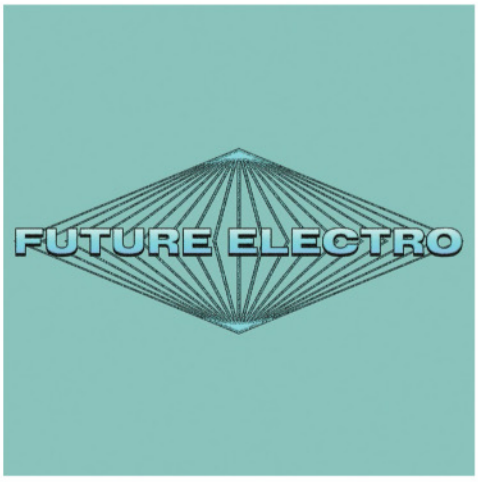
Matt Sassari Vol.1 £29.99

The DJ/producer lifts the lid on his studio stylings, in this sterling solo set of beats and samples. It touches on the deep and soulful influences he brings to tech house and beyond for labels such as CR2, Terminal M, and Relief. Everything in this rich and rewarding collection packed with intoxicating rhythms and undulating bass; plus some of the nicest snares and drum hits you'll hear all day.

It all goes to form a highly useful toolkit that can back up your ongoing work, or take it in bold new directions.

www.sampletoolsbycr2.com

7/10



UNDRGRND Sounds

Future Electro £14.95

In this version of the future, the machines have taken over – the decks, that is. And all the music pumping out the Skynet Diskotek's sound system has been captured here, for us mere bags of flesh to boogie to. Beats lurch from 90-140bpm, with all the fancy pants drum loops making the robots rock.

Bass sounds run from subbed out to modulated. With glitchy and distorted melodies keeping the tones fresh. There's also a nice stack of hits and FX to help define and tailor the edges of your forward-thinking tracks.

www.undrgrndsounds.com

7/10

Loopmasters

Pop Britannia £29.95

Mad fer it mash up of super sonic indie and pop sounds, for all you spicy boys and girls out there. This 782 MB grab bag is full of strutting guitar licks and meaty bass phrases, plus enough percussion grooves and shaker workouts to give Bez a run for his money. Adding extra clout and class are the Verve-inspired soaring string samples and all that '60s-nodding electric key and organ stuff, so tapped into at the time. Another sure-shot selection from the Vibe series, capturing an epic musical moment in time for you to plunder.

www.loopmasters.com

8/10

8KAYS

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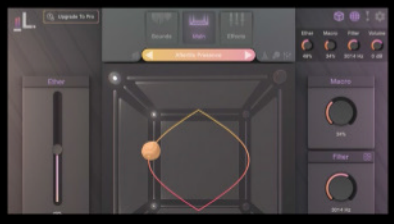
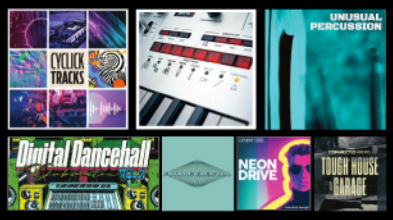


cm/free plugin

82 **LUNACY AUDIO CUBE MINI**

Our tutorial and video explains how to use this month's free CM plugin



cm/free samples

88 **BEST OF 2023**

This month's sample collection is a bumper pack of our best free samples from the past year

cm/free videos

93 **MASTERCLASSES**

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cm/plugin suite

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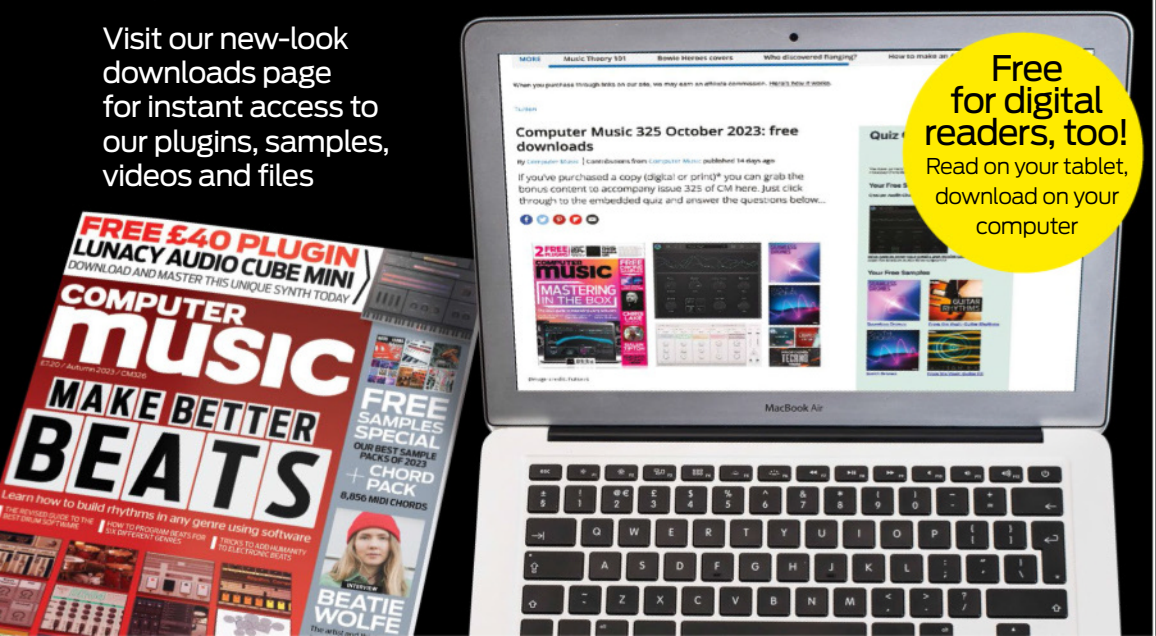

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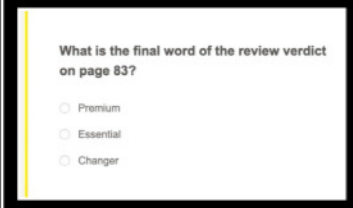

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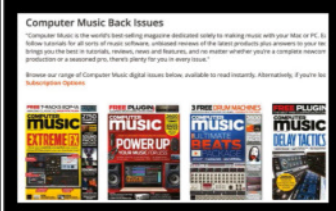


03 If you enjoyed that issue, you can still purchase our back issues via **bit.ly/pocketmags-cm** and downloads for the older mags will be kept at **filesilo.co.uk/computermusic**

>Free software PC MAC

Lunacy Audio CUBE Mini

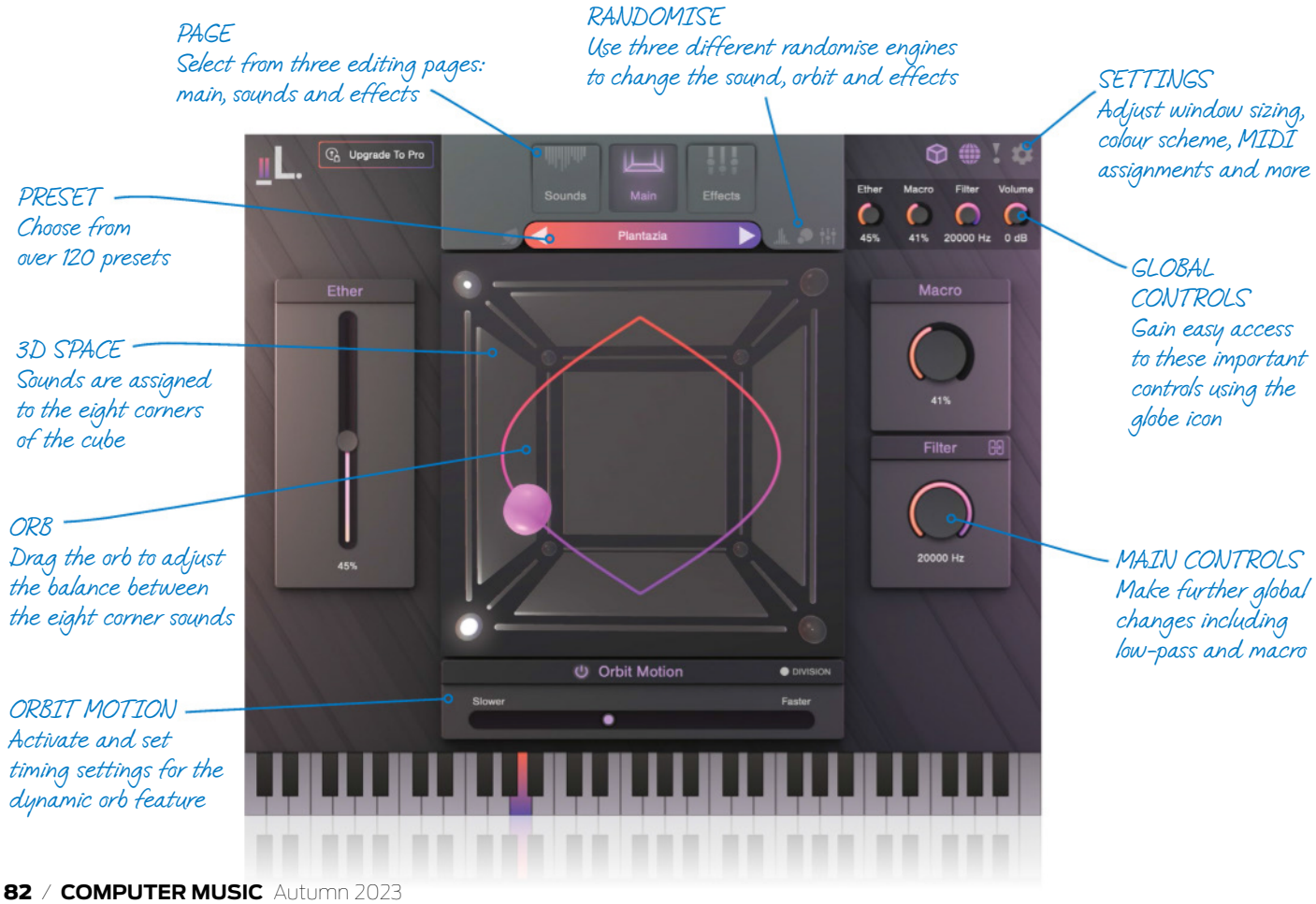
Are your synths missing the fun factor? This month's amazing giveaway could be just the solution

> CUBE is a powerful and creative synth that features an impressive 3D morphing engine. This month we're very excited to collaborate with developer Lunacy Audio, bringing you its bitesize version, CUBE Mini (normally $49), absolutely free.

Building synth sounds from scratch can be an incredibly rewarding process, but even the most hardcore patch creator loves the immediacy of a carefully crafted XY pad or macro control. CUBE Mini steps this up a level by combining up to eight sound sources in a 3D cube-shaped matrix with either manual or dynamic movement between them. It's an awesome idea that's even more fun in practice, and you can swap individual sounds and even head into more detailed sample-specific sound editing to modify envelopes, pitch, looping and beyond. Sounds are finessed using 13 global effects, and further great features include parameter randomisation and a CPU-saving eco mode. The core sound library includes 35 layered sample sources, and these are showcased via more than 120 presets.

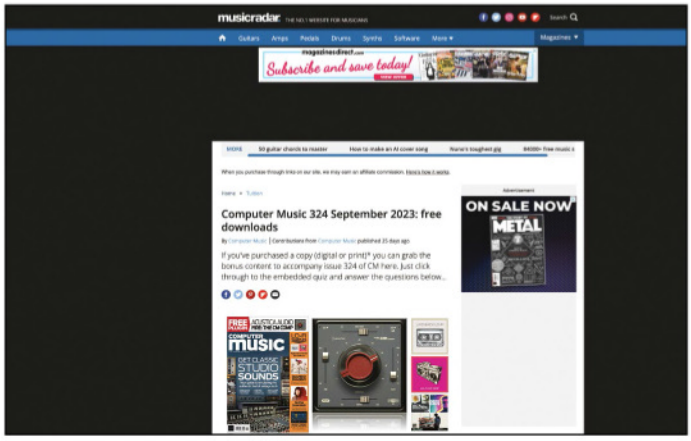
In this tutorial we'll show you how to claim, download and install your free copy of CUBE Mini, and then run through its key components. For the more ambitious, we then take a deep dive into the finer points of its synthesis engine and finish up with a look at the effects offering.

Finally, although CUBE Mini offers a simpler set of editing tools than its bigger sibling, it's still compatible with CUBE's pay-for expansions ($49 each), should you want more sounds but don't want to upgrade. If you do want to upgrade, you'll get 500 presets sourced from more than 100 sampled instruments, 40 selectable orbits and advanced modulation features. For details head to **www.lunacy.audio**



Download the accompanying video and the MIDI/audio files at **bit.ly/cm326downloads**

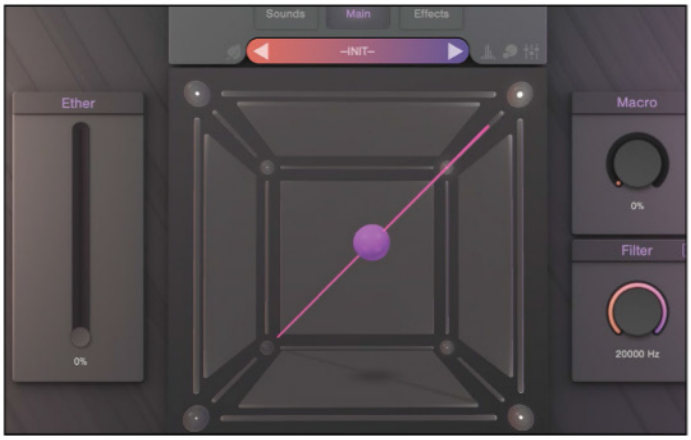
> Step by step 1. Installation



1 > Head over to www.bit.ly/cm326downloads. With the current issue to hand, answer the quiz questions. Once you've gained access, click the CUBE Mini link, input your info and follow the emailed instructions to receive your free coupon code. Apply this upon purchase at Lunacy Audio's website to download for free.

2 > The installer bundle has two installers: plugin and samples. You need to run both of the installers. When you launch CUBE Mini for the first time, you'll need to copy and paste your personal licence code (received in your purchase confirmation email) into the splash screen.

> Step by step 2. Familiarisation



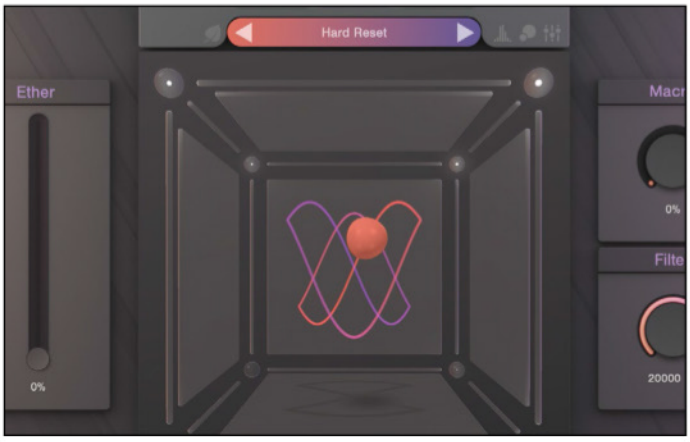
1 > When you first load up an instance of CUBE, the default Init preset has just one sample sound loaded. Even so, this basic setup provides a useful place to look at CUBE's various components. At the top of the plugin you'll see the preset bar and above this CUBE's three page selectors: Sounds, Main and Effects.

2 > The Main page is where you adjust CUBE's overall sound. Dragging the orb within the 3D space adjusts the blend between corners, while holding Shift and dragging the orb shifts the balance between the front and back four corners. The Orbit Motion button activates the dynamic orb, with both tempo-synced (Division) and free time options.

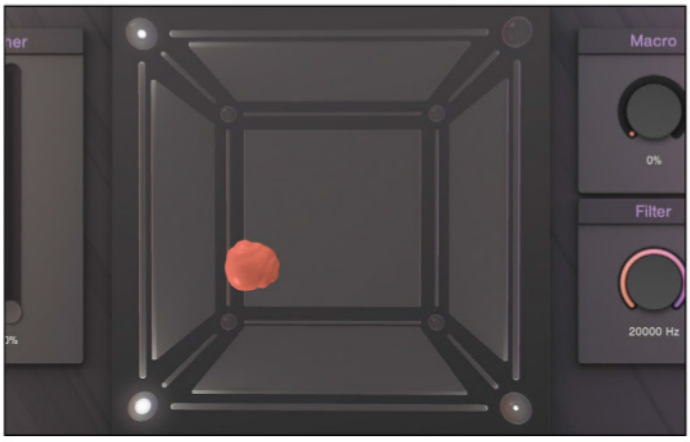
3 > Now select the Sounds page. This is where you assign and edit each of the eight sample sound sources; they're labelled A to H. If you still have the default preset open, you'll see only one sound is loaded. This overview page includes global envelope and level controls, meanwhile selecting a sound opens a sound-specific page.

4 > Finally, in the Effects page, you'll find eight buttons for the modules, and these include all of the usual suspects (EQ, Delay, Filter, Reverb and so on). Each button opens the relevant editor page and also includes an on/off button in the top right. You'll find some pages include more than one effect.

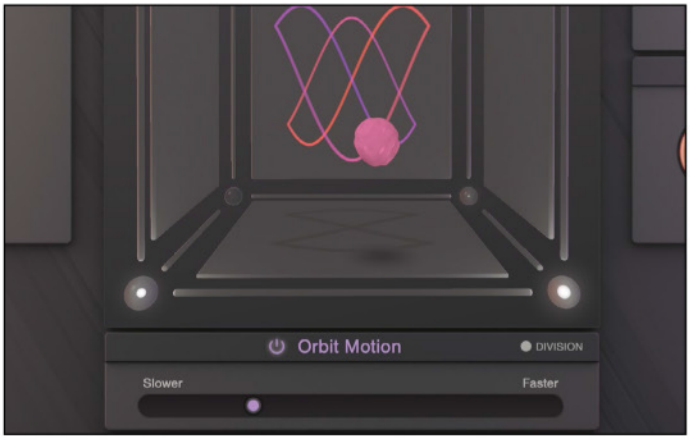
> Step by step 3. 3D Space



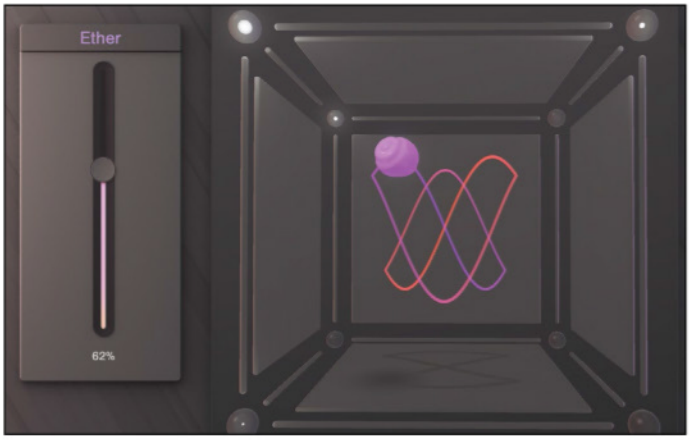
1 > To get started working with CUBE, let's load up a preset. Click on the preset bar at the top to open the browser. We've loaded the preset Hard Reset. This is a good demo preset as all eight corners are populated. Once loaded, use the button below the cube to deactivate Orbit Motion.



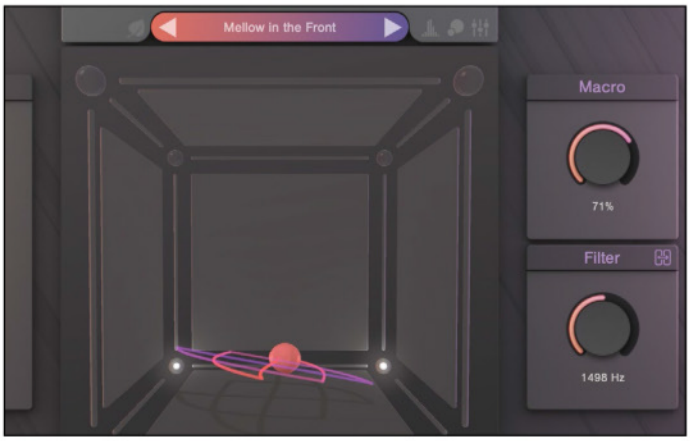
2 > Try moving the orb. You should hear the sound changing as you do so and also see the corners glow as you move towards them. Now try holding Shift and moving the orb. You're now adjusting the blend with the rear four corners. You may have spotted this preset has the same sounds on diagonally opposite corners.



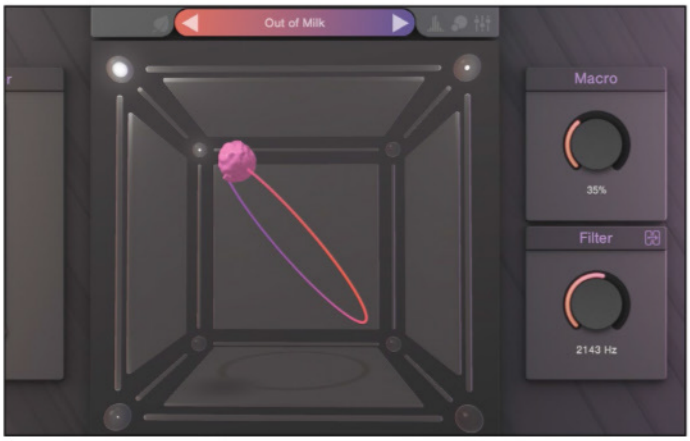
3 > As an alternative to modifying manually, CUBE's sound can also be morphed dynamically using the Orbit Motion setting. Each preset has an associated orbit that moves the orb in the 3D matrix. Although you can't edit this orbit, you can change its speed. Here we've switched off the tempo sync, instead choosing a medium slow free time setting.



4 > CUBE Mini has three further main page controls and these influence both static and orbit motion sounds. Ether is a dedicated slider that blends between the two samples layers in each sample preset. These typically have a different timbre, and this is quite obvious on the Hard Reset preset we have loaded.

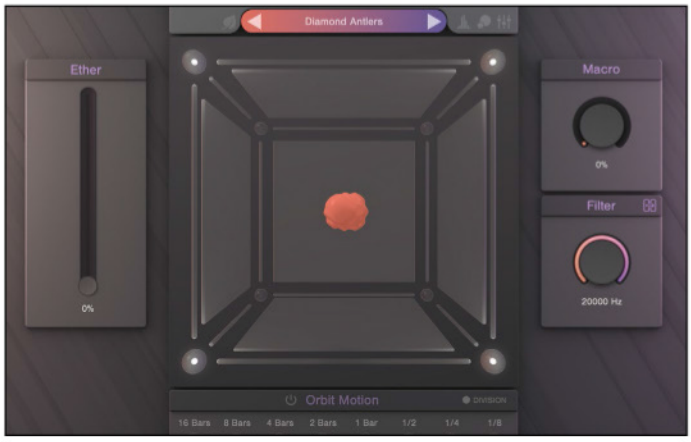


5 > Over on the right, you'll find both Macro and Filter controls. Each preset's macro assignments are unique and are also described in the preset details in the browser. Try a few different presets to see what's on offer. We've loaded the preset Mellow in the Front, and the macro adjusts both the effects and the orbit orientation.



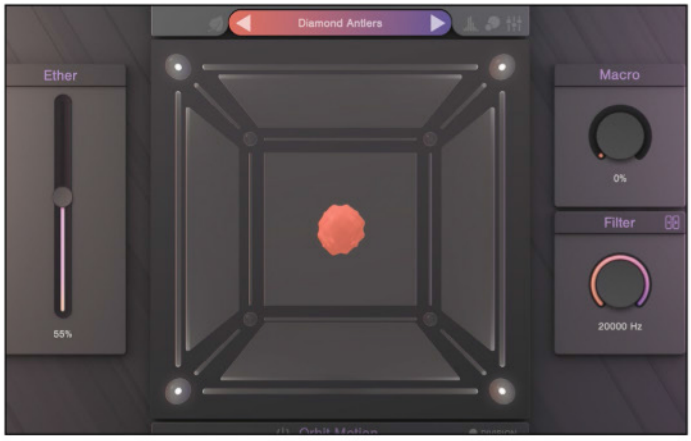
6 > Finally, the main page filter is a global low-pass design and is in addition to the filter on the Effects page. It can be placed before or after the effects section (there's a button just above the knob). Here we've loaded the preset Out of Milk, and the global filter is already set as part of the preset.

> Step by step 4. Sounds



1 > The main page provides plenty of ways to modify a sound, but if you want to actually edit parameters such as envelopes, or get properly creative by swapping out sounds, then you'll need to head to the Sounds page. To get started, we've loaded preset Diamond Antlers and deactivated the Orbit Motion.

2 > As an initial basic change, head to the bottom right and hardpan the sound to the left. Now use the cube grid graphic to switch to sample slot B. Here hardpan the sound to the right. Heading back to the Main page, if you blend at the top just between corners A and B you should hear the sound move across the stereo spectrum.



3 > Now if we select the Sounds page and Overview tab we should see four sounds loaded (A, B, C and D). As you can see from the cube grid graphic these are the front four corners. By selecting the sample slot directly, or A on the grid, we can now open the detailed editor. This now says Corner A Editor at the top.

4 > Back on the Corner Editor page let's look at some further options. First up, the sample section allows you to edit the playback start point, reverse and loop the sample and also choose monophonic playback. With up to eight samples, there's also a really handy Solo option so you can focus on just the sample you're editing.

5 > To tailor the sample playback there's a simple ADSR envelope. To get started, make sure its on/off switch is enabled and then adjust accordingly. Significantly, the individual ADSR envelopes bypass the Global ADSR, so your preset can combine some sounds with specific envelopes and some that follow the Global envelope.

6 > Finally for this page you have three Tone parameters. High and low-pass filters allow you to focus the frequency of each sample source, meanwhile a formant filter (Color) provides an additional way to shape the sample tone. We've adjusted the high-pass and turned the Color to max for a thinner, more edgy sound.

> Step by step 5. Deep dive

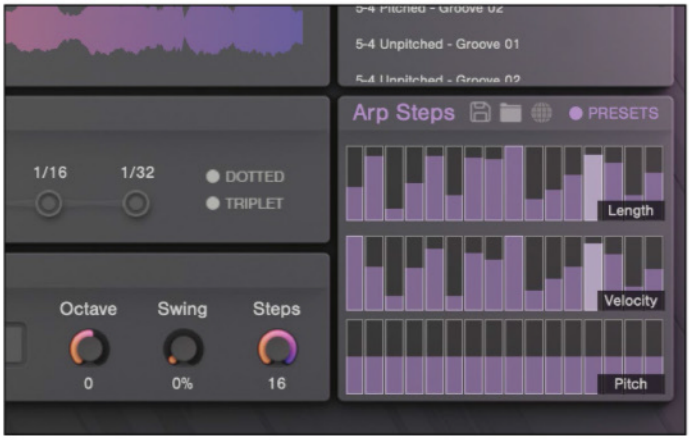
1 > The Basic corner editor is supplemented by a further Tweak page that you select in the top right. Here you'll find a Stereo Width option, Key Range and also a Glide time setting (0 to 2000ms) that's active when you're in monophonic mode. Here we've set this to 155ms.

2 > The remainder of the Tweak page handles the Loop Time and Arpeggiator feature. To get started you need to activate the Loop Time panel and set a loop time: the options are 1 bar to 1/32 bar with triplet and dotted settings. This defines the arpeggiator step time division: we've set ours to ¼ note.

3 > Now you can head to the main Arpeggiator panel below and the Arp Steps section to the right. On the main panel you'll find various typical arp settings including Pattern style (up, down, random and so on), number of Octaves, Swing and number of Steps (1 to 16).

4 > The Arp Steps section on the right includes three lanes for step-specific control of length, velocity and pitch. Adjust the number of steps in the main Arp section and you'll see the step editor update accordingly. Here we've set our number of steps to the maximum (16).

5 > CUBE Mini provides plenty of scope to tailor pretty cool arpeggios. For our 2-octave basic arpeggio and as a demonstration, we've initially edited the velocity using alternating levels to create a more interesting outcome. Then we've added just a couple of pitch offsets (-9 semitones) for a bit more interest.



6 > Finally, if you want a quick solution there are a bunch of arpeggio presets. In the top right of the Arp Step section, click on Preset to open the browser. We've loaded up a preset with six steps. Note the preset only includes the steps, not the type of arpeggio, swing or octave settings, all of which you set yourself.

> Step by step 6. Effects

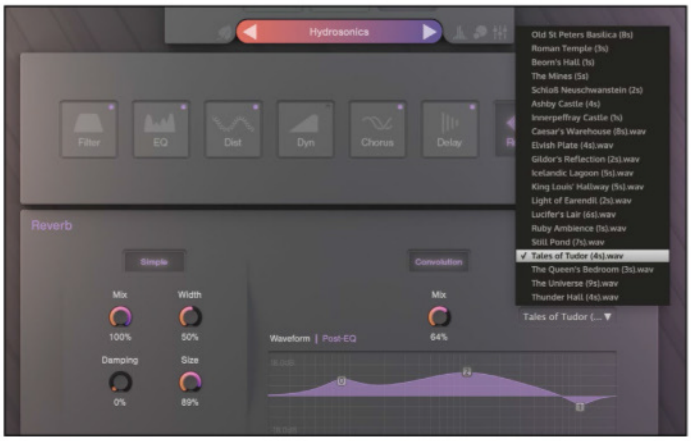
1 > Now let's take a look at CUBE Mini's effects section. Try loading up a preset with lots of effects. If you select the Effects page and then use the preset menu bar arrows to switch through the presets sequentially, you can quickly see how many modules are active. Here, we've chosen the preset Hydrosonics.

2 > Instantly we can see this uses the Filter module in band-pass mode. To bypass just this effect, we can either select the Filter button in the main parameters or use the tiny on/off button on the module selector at the top. A quick look reveals four filter options: low-pass, high-pass, band-pass and notch.

3 > We've already seen some other options for filtering, but if you really need to apply detailed EQ then the effects EQ is your tool. With a choice of five filter shapes, you can add as many bands as you like, and band width is adjustable via SHIFT + mouse. We've finessed the preset's EQ settings.

4 > The Distortion page is actually three effects (Saturation, Waveshaper and Bitcrusher) and between them they deliver a broad range of tones. The Waveshaper has five types, and we particularly like the more edgy On Fire setting. For more serious destruction head to the sample rate and bit depth options.

5 > The Chorus page includes both Phaser and Chorus, and between them they can add richness to your sound. Next to this, the Delay page offers up both tempo-synced and free options with individual time settings for left and right channels.



6 > Finally, our favourite effects module is the Reverb, which includes both algorithmic and convolution effects, both of which can be sewn together. With 20 impulse responses and yet more EQ (post reverb), there are plenty of ways to create spaced-out patches all within CUBE Mini's plugin space.

The best packs of 2023

We've crafted sample packs of rich variety and quality this year, and now is your chance to mop up our very best **cm** packs of 2023. Download all these and more from bit.ly/cm326downloads

Cyclick Tracks

The first of our 'Track Builder' packs from back in January, Robbie from Cyclick assembled this glorious ensemble of multi-instrumental samples. Here's what he had to say at the time: "This sample pack is made up of six tempo-based track building construction kits across a handful of genres: funk, synthwave/dreampop, French house and shoegaze. These are, of course, starting points and even the slightest of manglings and mix-ups can take them to a whole new space, or at least a different genre."

The loops are all two or four bars long, and each instrument provides three loops per kit. For more info on the pack (and all the other packs featured) see the PDFs in the respective folders of each pack.

Groovy Beats and Bass

The second 'Track Builder' pack via Groove Criminals is a more rhythmically-focused collection. Over to Oli: "We've put together a selection of mix and match drum loops and basslines to quickly assemble the rhythmic foundation of a track. The drums are split into kick and snare, hi-hats and percussion, and are designed to work with each other so you can mix and match until you get a combo you like. "All the drums were either put together in Battery using our frankly stupid amount of drum samples, or the Airbase 99 and TR-8."

Oli's bass samples are generated via both software and hardware, some classic analogue synths coming out to play.

Soundtrack Trailers

For our soundtrack-themed issue back in Feb, we commissioned some special cinematic packs. Robbie opted to aim for the epic impact of widescreen trailers: "This sample pack pulls together the essential ingredients for a soundtrack trailer: pounding, giant drums, suspenseful prep piano chords and scratchy instruments (a violin and a concert zither). The chunky drums make use of pitchshifting, reverb, and compression, with a healthy dash of distortion along the way."

On the 'Evil' violin, Robbie said: "It's a 3/4 size school cheapo I found in the loft. The bow is in good condition, but the violin has only two strings, so it was decided that this would not be a tuneful affair!"

Cinematic Hits

Oli's soundtrack-themed pack came in the shape of some pulse-pounding cinematic hits. "We've gone all cinematic," Oli explains. "We have included some atmospheric textures/beds, stings, low-end rumbles and suitably epic piano samples. As usual, we've mixed up using both hardware and software for these samples.

"We lent heavily into our Korg Triton hardware synth to bring you some of those special 1980s/'90s synth logo stings that we remember from old VHS tapes back in the day. We then gave these sounds a helping hand of wobbly delay and rich reverb effects courtesy of the Demedash T-120 delay and Old Blood Noise Minim." There's some solid stuff here.

Download all assets for this issue at **bit.ly/cm326downloads**

Bass and Leads 1

In March we demanded some thundering bass – and some corresponding lead lines. Robbie delivered in spades: "This sample pack provides a set of bass and lead synth lines in loop form (either two or four bars in length) across ten tempos. Each tempo folder contain six bass lines and six lead lines which were created as complementary pairs by key. Where there are two pairs of the same key, a number suffix has been added to the filename. The samples were created with a combination of analogue and digital synths which were constantly tweaked and programmed for each pair of lines, and sometimes even between halves of those pairs." More info in Robbie's PDF.

Bass and Leads 2

Oli at Groove Criminals also came up with the required bass and lead goods: "On the software side we lent into our trusty trio of Massive (v1), Alchemy and Fxpansion Strobe 2. We used both the inbuilt FX of the synths and also ran them through various delays and reverbs including Texture and Scatter, which both add a nice granular edge to the end result.

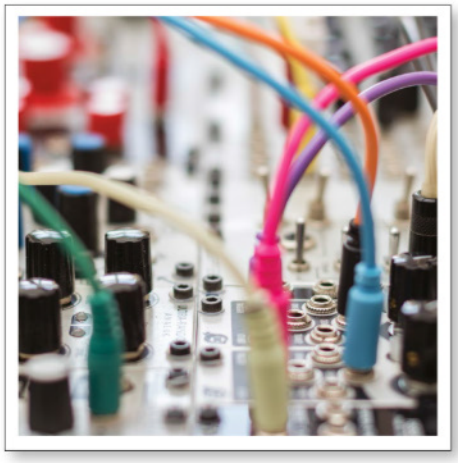
"Hardware-wise, we were lucky enough to grab a few minutes on a Prophet Rev 2 and managed to squeeze out some chunky bass loops. Since the return of the Juno-60 we had on (very) extended loan we've realised we missed its character, especially bass-wise. The Ju-06a, although dinky, actually reproduces the sound of a Juno-60 (and 106) really well to our ears."

Distorted and Mangled 1

In April, we wanted one thing and one thing only – smashed, crushed, distorted and mangled samples to provide gritty textural starting points and track rougher-uppers. Robbie's pack was everything we could have hoped for. "This sample pack serves up a set of distorted and mangled loops so you can throw some weird into a track, tuck behind more straight elements to enhance and create depth, or just mangle them further – should you be an aural sadist.

"The loops are split into six tempo groups, each containing beats, synth tone-drones, arpeggiations, guitar and electric piano. The beats, keys and synths were all processed with plugins, albeit in a suitably heavy handed manner. The guitar sound was mostly produced by the Telecaster and pedals, with just a plain amp emulation in Amplitube finishing the job, plus an EQ and limiter. Throughout, pitch and delay modulation were used to do a lot of the mangling work, while distortion was gained in multiple stages either side of other processes, many of them quite subtle on their own but when combined create heavily saturated and blasted-out tones."

Selected hardware, pedals and software used include a Squier Telecaster, UA Starlight, Echo Station, Dreadbox Komorebi pedal, Fairfield Circuitry Long Life, Sandpit Scrambler Fuzz pedal, Sandpit Pepbox Fuzz pedal, Electro-Harmonix Memory Boy, Xvive Memory Analogue Delay, Keeley Fuzz Bender, Moog MF Trem pedal and a selection of Arturia V Collection synths.



Distorted and Mangled 2

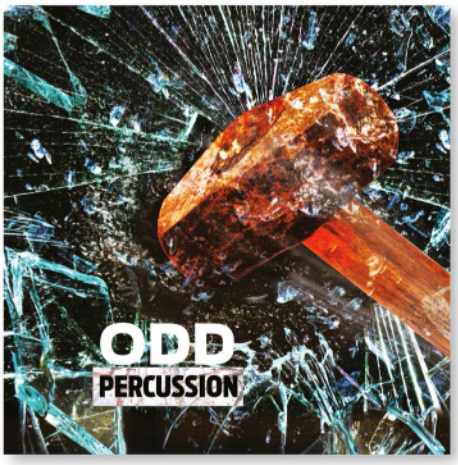
Oli's take on the distorted and mangled brief was equally as tasty. "It's all about the distortion, fuzz and muck this month, and we love it. We kick off with some vibrant beats thrown through lashings of fuzz and distortion of both hardware and software flavours. To push the envelope a bit further, we also maxed out the settings and included a chunk of destroyed loops, these might work well for layering or just indulging in chaos." But the beats are just the start...

Unusual Percussion

A few months back, we requested some percussive textures that took something of an off-beat approach. Answering the call with aplomb, Robbie's collection of unusual percussion samples came as a result of his experiments with using non-musical objects in a new context. "Everything that can be struck can be percussion, it may just not sound like it to begin with. To this end, a set of non-musical objects were recorded being hit with drum sticks, pencil, screwdrivers and the like using a very simple setup of an Audio-Technica ATM-450 condenser mic, a Focusrite ISA828 preamp and, that's it – no EQ, compression or whatever.

"Long sessions of whacking stuff near the mic were edited down to the 102 source samples that are compiled in the Raw Sources folder, along with the Kontakt instrument patches used to run the loops from. The loops were programmed in Nuendo with the five Kontakt instruments being re-pitched for every tempo. Different patches were layered and the Kontakt output(s) routed to five processing groups. These were made up of a plain flavour (just a little room reverb, EQ and limiting), a sidechain compression process, a crunchy distorted chain, a pitch shift/delay path and a multi-echo process."

Among the gear used by Robbie include the Audio-Technica ATM-450 condenser mic, Focusrite ISA828, Audio Orion 32 AD/DA interface, Steinberg Nuendo 11, NI Kontakt 5, Liquid Sonics Seventh Heaven Pro, iZotope Ozone 8 and Cableguys ShaperBox 3.



Odd Percussion

Oli packaged up a collection of traditional rhythmic instruments, interrogated in some odd ways. "We've put together a bucketload of unusual percussive hits here," he explains, "including some foley, electronic, metallic and DIY instruments and sounds. We used our trusty piezo shaker boxes (fitted with a contact mic, spring or doorstop and filled with BB pellets) both recorded raw and processed. We also made a DIY shekere." For more info, see the folder.

Laid-Back Lo-Fi

We kicked back a little at the start of summer, and commissioned two lo-fi packs. Robbie's set the tone well. "The chilled-out vibes of the current lo-fi genre are delved into with this brand new sample pack. There are three tempo-grouped folders (68, 76 and 82bpm) of beats, electric bass, electric guitar, piano, keyboard and synth loops, plus a collection of one-shots to sprinkle over your loops or to use to augment beats, as well as wrangle and mangle them into new forms. With this suite of sounds at your disposal, get into a relaxed zone and enjoy piecing together your own laid-back, soporific tracks for study, travelling or just laying back after a long day."

Lo-Fi Hip-Hop

With a more hip-hop-angled spin on our Lo-Fi assignment, Oli details his crackling collection: "We've focused on the crackle, snap and pop of lo-fi this month, and the sounds of lo-fi hip-hop in particular. On the hardware side we threw some drum samples through both our Akai MPC and our Elektron Model:Samples as well as leaning into the degraded sounds of the MicroGranny 8-bit sampler. To further push the grit and wobble we used a couple of our favourite pedals for this type of effect, namely the Hungry Robot Wardenclyffe which has a lush reverb. We've also sampled some actual crackle from various records and some genuine tape hiss from a couple of cassette recorders we had laying about."

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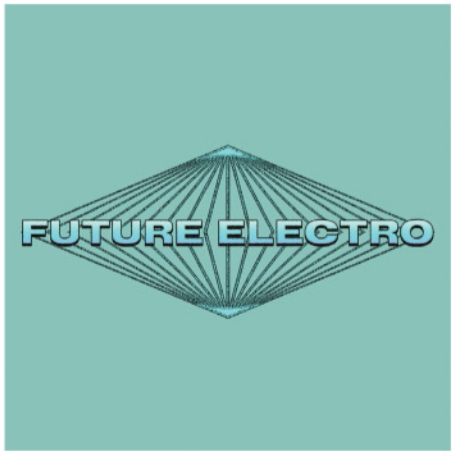
Loopmasters

Loopmasters cm326 samples

This month's demo sample selection highlighting Loopmasters' latest releases

01 **Keep it Sample** Error 303 – Acid Basslines
02 **Connectd** Tough House & Garage
03 **UNDRGRND Sounds** Future Electro
04 **RV** Peaktime Techno
05 **Renegade Audio** Digital Dancehall Vol 2
06 **Industrial Strength** Lenny Dee – Neon Drive



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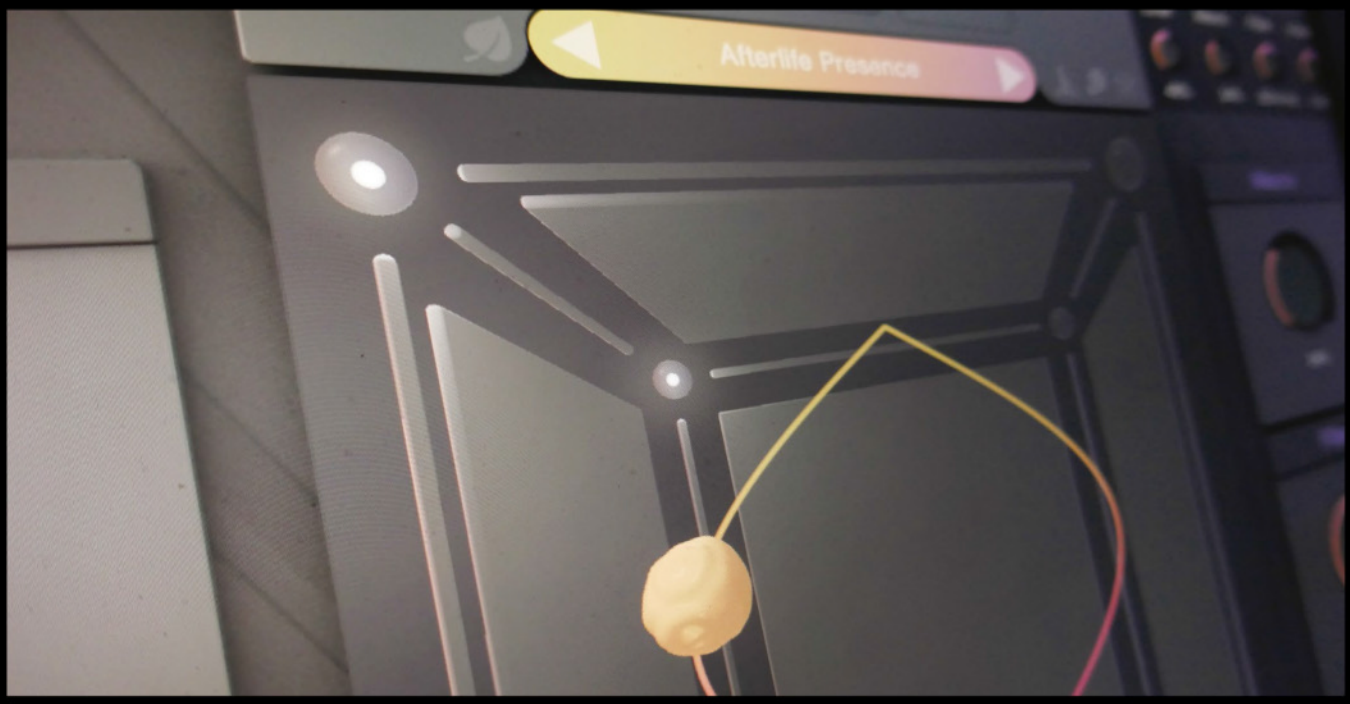

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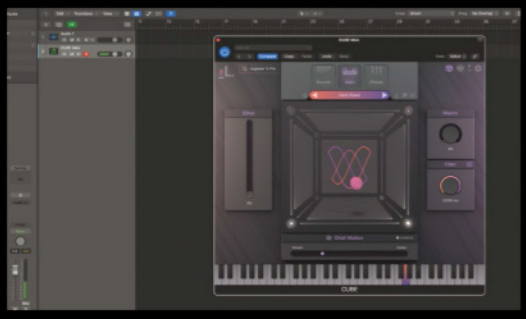

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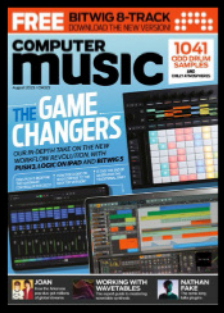

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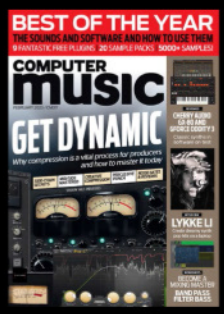

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